

# ENVIRONMENTAL ASSESSMENT BOARD



## ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARINGS

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VOLUME: 63

DATE: Tuesday, September 24, 1991

BEFORE:

HON. MR. JUSTICE E. SAUNDERS	Chairman
DR. G. CONNELL	Member
MS. G. PATTERSON	Member

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ENVIRONMENTAL ASSESSMENT BOARD  
ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARING

IN THE MATTER OF the Environmental Assessment Act,  
R.S.O. 1980, c. 140, as amended, and Regulations  
thereunder;

AND IN THE MATTER OF an undertaking by Ontario Hydro  
consisting of a program in respect of activities  
associated with meeting future electricity  
requirements in Ontario.

Held on the 5th Floor, 2200  
Yonge Street, Toronto, Ontario,  
on Tuesday, the 24th day of September,  
1991, commencing at 10:00 a.m.

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VOLUME 63  
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B E F O R E :

THE HON. MR. JUSTICE E. SAUNDERS	Chairman
DR. G. CONNELL	Member
MS. G. PATTERSON	Member

S T A F F :

MR. M. HARPUR	Board Counsel
MR. R. NUNN	Counsel/Manager, Information Systems
MS. C. MARTIN	Administrative Coordinator
MS. G. MORRISON	Executive Coordinator





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B. HARVIE	)	
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A. MARK	)	ASSOCIATION
S. COUBAN	)	PROVINCIAL GOVERNMENT
P. MORAN	)	AGENCIES
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D. STARKMAN	)	GROUPS
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D. HUNTER		DOFASCO
B. TAYLOR	)	MOOSONEE DEVELOPMENT AREA
D. HORNER	)	BOARD AND CHAMBER OF COMMERCE





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<u>AMIR SHALABY,</u>	
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1 ---Upon commencing at 10:00 a.m.

2 THE REGISTRAR: Please come to order.

3 This hearing is now in session. Please be seated.

4 THE CHAIRMAN: Mr. Campbell?

5 MR. B. CAMPBELL: I will proceed in face  
6 of the hum.

7 ---Off the record discussion.

8 MR. B. CAMPBELL: Mr. Chairman, before  
9 proceeding with the cross-examination of Panel 4, there  
10 is a matter relating to Panel 6 which Hydro has  
11 requested be placed on the record at the earliest  
12 opportunity.

13 The amount of hydraulic resources which  
14 Hydro believes is reasonable to include in its planning  
15 has evolved significantly since the publication of the  
16 Demand/Supply Plan in 1989. The changing relationship  
17 between the Ontario government and the First Nations in  
18 Ontario, as evidenced by the statement of political  
19 relationship signed in August of this year, and the  
20 changing relationship between Hydro and the Aboriginal  
21 groups, have been important factors in this evolution.

22 The Board will also be aware of recent  
23 organizational changes at Hydro which place a higher  
24 level of priority and commitment on Aboriginal and  
25 Northern affairs. All of this, together with the need

1       for the active involvement of Aboriginal groups  
2       affected, has led to a re-examination of Hydro's  
3       approach to planning in relation to the Moose River  
4       Basin.

5                       As a result, Hydro is officially  
6       suspending planning for the Moose River Basin  
7       hydroelectric potential beyond the redevelopment and  
8       extensions of the Mattagami Complex until a co-planning  
9       process for the other projects has been developed and  
10      agreed to by the affected Aboriginal groups. Aside  
11      from certain field studies, which have already been  
12      agreed to with those Aboriginal groups, work will not  
13      commence on the Abitibi or other Moose Basin projects  
14      after the Mattagami until an agreement is reached.

15                     As are you aware, there is significant  
16      hydraulic potential associated with the Moose River  
17      Basin sites after the Mattagami extensions. However,  
18      given the uncertainty of whether and when an acceptable  
19      co-planning process can be put in place, for planning  
20      and analysis purposes Hydro will be removing the Moose  
21      River potential beyond the Mattagami from the base case  
22      in the overall demand/supply balance.

23                     The hydraulic potential to be included  
24      will therefore consist of the following in addition to  
25      Big Chute and Lake Gibson. It will consist of Little



1 Jackfish, Niagara River Development, Mattagami  
2 extensions, Mississauga River, that is, Patten Post,  
3 and Ragged Chute.

4 Of these, project EAs have been filed for  
5 Little Jackfish. It was filed in September of '88.  
6 The Mattagami Extensions, filed November 1990. And  
7 Niagara River Development, filed March of 1991.  
8 Government direction has been received to give priority  
9 to the early environmental assessment of these three  
10 projects and of the Mississauga River, that is Patten  
11 Post, project.

12 The Ragged Chute Redevelopment which adds  
13 less than 100 megawatts of capacity to existing  
14 facilities on the Montreal River is much later in the  
15 planning period and is not, of course, located within  
16 the Moose River Basin.

17 While Hydro has taken this significant  
18 step in an effort to build a better working  
19 relationship with the Aboriginal communities in the  
20 Moose River Basin and remains committed to improving  
21 relations with all aboriginal groups, it is not Hydro's  
22 intention to suspend work on the other priority  
23 Northern projects. Project studies, such as those  
24 being conducted with transmission from Manitoba, are  
25 already proceeding with the involvement of the

1       Aboriginal groups affected.

2                   I will be advising all parties of this  
3       matter so they may take it into account in their  
4       preparation for the appearance of Panel 6 dealing with  
5       hydraulic resources, but as I said, we did want to  
6       bring this matter to the Board's attention at the  
7       earliest opportunity, which has been this morning.

8                   THE CHAIRMAN: Do you have a net impact  
9       figure on the plan, what that does to the total that we  
10      are going to be considering?

11                  MR. B. CAMPBELL: I had that number  
12      written down and have just successfully misplaced it.

13                  I believe the capacity involved at the  
14      Abitibi Complex is approximately 900 megawatts and the  
15      balance of the Moose, approximately 400 megawatts.

16                  There we are. I knew I had it written  
17      down on some important piece of paper.

18                  It's 900 megawatts, and on the other  
19      Moose sites, it's approximately 580 megawatts.

20                  THE CHAIRMAN: Where does that leave the  
21      hydraulic plans net, what does that net out? Can you  
22      just remind me of that?

23                  MR. B. CAMPBELL: That's not a figure  
24      that I have in front of me at the moment. I can get  
25      those figures for you very quickly.

1                   THE CHAIRMAN: Just a minute. We don't  
2                   need to take up the time at the moment.

3                   I think no matter what the figures are,  
4                   this is a significant change in the plan as presented  
5                   to this Board, and it raises again the issue that we  
6                   have been struggling with and anticipating all along  
7                   with Panel 6; that is, the difference between the  
8                   generic considerations that go into the Hydro plan and  
9                   the spite specific considerations.

10                  That's a matter that has already been the  
11                  subject of one motion and it's certainly something that  
12                  we are thinking about as we get ready to hear the  
13                  evidence on Panel 6, because I think there has to be  
14                  some understanding of what the parameters are in the  
15                  Panel 6 evidence so that people don't waste their time  
16                  in preparing for matters that really aren't pertinent  
17                  to Panel 6 considerations. I think as you recall, I  
18                  think it was the Moose River motion, that we posed some  
19                  questions to Hydro about that, if you remember.

20                  MR. B. CAMPBELL: Yes, Mr. Chairman. And  
21                  in that regard, generally, Mr. Chairman, I would simply  
22                  say that what we are talking about here is the overall  
23                  amount that we believe is appropriate to rely on for  
24                  planning purposes, and the figures that -- the  
25                  facilities that will be carried forward into this

1 integration exercise that is being conducted over the  
2 fall, taking these changes into account.

3 I can advise the Board that in doing  
4 that, as I say, the base case will involve the  
5 facilities and capacity that I have outlined. It will  
6 not include the balance of the Moose sites, although we  
7 will be doing what I guess I would call sort of  
8 sensitivity analysis that would indicate how the plan  
9 might be affected if indeed a co-planning process could  
10 be agreed to and it became appropriate to reflect at  
11 some future point additional hydraulic capacity into  
12 the planning.

13 But simply what I want to record here  
14 today is that because of the uncertainty that now  
15 surrounds that question, it's not felt appropriate to  
16 include that in Hydro's, what I will call, the base  
17 case analysis.

18 [10:15 a.m.]

19 DR. CONNELL: Mr. Campbell, should we  
20 assume that there are no changes in the specifications  
21 for the Mattagami complex with respect to capacity and  
22 operating mode?

23 MR. B. CAMPBELL: Yes, I think that would  
24 be a fair assumption; although, again, on that, I would  
25 say, we have included, and I think it is consistent



1 with our evidence throughout from the beginning of this  
2 matter, we have included a particular amount of  
3 capacity for planning purposes.

4 We fully recognize and respond that in  
5 moving to the project stage, there will be, for the  
6 various hydraulic projects in the course of the  
7 project-specific EAs, consideration given to  
8 alternative methods of developing the hydraulic head on  
9 the river which could, in the final analysis, change  
10 those capacity and energy numbers somewhat, but that is  
11 an implementation level I think that does not affect  
12 the overall planning in any material way.

13 THE CHAIRMAN: Thank you.

14 MR. B. CAMPBELL: Thank you, Mr.  
15 Chairman.

16 MS. PATTERSON: I guess, Mr. Campbell,  
17 what I am wondering is whether this means that for the  
18 period of the 25-year plan, you are not relying on  
19 these developments and you are not assuming that there  
20 will be any development for the next 25 years on those  
21 sites.

22 MR. B. CAMPBELL: I think I put it  
23 slightly differently, beyond Mattagami, we are saying  
24 that in looking out over the planning period, the  
25 uncertainty associated with those sites is such that it

1 will not be included in the base case analysis and  
2 that, in fact, as is apparent from what I said earlier,  
3 if an appropriate co-planning process cannot be  
4 developed with the aboriginal groups effected, then  
5 that capacity would never appear in Hydro's plans. I  
6 think it is that simple, but we don't know the answer  
7 to that question yet. And those are discussions which  
8 Hydro earnestly hopes can be embarked on with those  
9 aboriginal groups.

10 MS. PATTERSON: Thank you.

11 THE CHAIRMAN: Mr. Heintzman,

12 MR. HEINTZMAN: Mr. Chairman, my name is  
13 Tom Heintzman and it gives me great pleasure to appear  
14 before the Board this morning on behalf of Atomic  
15 Energy of Canada Limited. Atomic Energy has not, up to  
16 this point, participated as actively as it would like  
17 to and intends to participate actively from here on in.

18 With me this morning are David Hamer and  
19 Cindy Findlay from the same firm, McCarthy Tetrault.  
20 And I and David Hamer and Cindy Findlay will be in  
21 attendance as we feel is appropriate and the Board  
22 directs.

23 And I am prepared to deal with any issue  
24 that the Board may wish to raise with me concerning the  
25 appearance of our firm on behalf of Atomic Energy

1       either now or at an appropriate time.

2               THE CHAIRMAN: Well, as I think Ms.  
3       Morrison has advised you, there is a possible problem  
4       arising out of the relationship between a partner in  
5       your firm and a member of the panel.

6               MR. HEINTZMAN: Yes. One of the over 200  
7       partners of McCarthy Tetrault is Rene Sorrell who is  
8       the husband of Ms. Patterson and that is a matter which  
9       I can put on the record. And I have considered the  
10      matter and consider it to be absolutely no problem  
11      whatsoever for any party.

12              And if the Board wishes me to either  
13      speak to that now or at an appropriate time or in  
14      response to any other views, I would be more than happy  
15      to do so.

16              THE CHAIRMAN: Well, the Board has given  
17      some consideration in anticipation of this. There are  
18      many, many parties - 157, I think all tolled - some of  
19      whom are not here today. So I think that all parties  
20      should be apprised of this particular situation and  
21      then if they have any comments of any kind they wish to  
22      make, they should be given an opportunity to do so.

23              I have spoken to Ms. Morrison about this  
24      and she is able to send out a notice to all parties  
25      along with other information that she is sending out

1       today, so the information will be going out today to  
2       all parties.

3                   MR. HEINTZMAN: Thank you. If I may, I  
4       am in the midst of a trial, so I will not be here in  
5       the next short while and Mr. Hamer and Ms. Findlay will  
6       ably be here and I will await further instructions from  
7       the Board.

8                   THE CHAIRMAN: Thank you, Mr. Heintzman.

9                   MR. HEINTZMAN: Thank you.

10                  THE CHAIRMAN: Ms. Kleer?

11                  MS. KLEER: Actually, I believe, Mr.  
12       Campbell had a few other matters that he wanted to  
13       attend to.

14                  MR. B. CAMPBELL: Yes. There is one  
15       other matter that arises from the end of yesterday's  
16       cross-examination. I undertook to advise Ms. Kleer and  
17       the Board on the study entitled, "Supply Side  
18       Environmental Effects of Ontario Hydro's Demand  
19       Management Plan" which was attached to Interrogatory  
20       4.20.27 that has been referred to earlier in this  
21       panel. It contains within it a statement:

22                               Supply side social environmental  
23                               effects of DM are being assessed in a  
24                               separate study and will be documented  
25                               elsewhere.

1                   And Ms. Kleer asked to be advised what  
2                   work that, in particular, was referring to.

3                   We have made inquiries and although this  
4                   may be buried in some department's work budget, I am  
5                   unaware of any work that is being done that would fit  
6                   that description other than - and it may be that this  
7                   is what was being referred to - other than a study of  
8                   the economic impact that is on gross provincial product  
9                   and on rates of the demand management efforts being  
10                  undertaken by Ontario Hydro.

11                  That analysis or work has been referred  
12                  to previously by Mr. Wilson in his testimony and has  
13                  been requested already by way of both interrogatory and  
14                  undertakings given during the course of this panel.  
15                  And it will be, as I understand it, forthcoming shortly  
16                  in response to the undertaking.

17                  I have advised Ms. Kleer of this and I  
18                  just thought I should advise the Board as well, so it  
19                  can be aware of the matter.

20                  THE CHAIRMAN: I remember now that I have  
21                  some housekeeping also to do; that is to add some new  
22                  parties to the list of parties. The Ontario Federation  
23                  of Labour as a part-time party, the Canadian Union of  
24                  Public Employees as a part-time party, the Canadian  
25                  Manufacturers Association Ontario branch as a



1 participant, and the Society of AECL Professional  
2 Employees as a participant.

3 Subject to any comments that any party  
4 may wish to make about the addition of those parties  
5 and participants, they will be added to the record.

6 Ms. Kleer?

7 PAUL JONATHAN BURKE,  
8 AMIR SHALABY,  
9 MARION ELIZABETH FRASER,  
10 LYN DOUGLAS WILSON,  
11 WILLIAM OSBORNE HARPER,  
12 IAN DUNCAN MacLELLAN; Resumed

13 CROSS-EXAMINATION BY MS. KLEER: (Cont'd)

14 Q. All right. Perhaps we can go back to  
15 the question we were dealing with yesterday, Mr.  
16 Harper, regarding what would happen if you removed the  
17 Mattagami extensions and redevelopments from  
18 consideration in your load shifting potential  
19 calculation.

20 MR. SHALABY: A. Maybe I can give you  
21 the information we have been able to gather. The  
22 contribution of the Mattagami to the 16-hour peaking  
23 capability by the year 2000 is about 51 megawatts.  
24 The contribution of the entire hydraulic program to the  
25 16-hour peaking capability is about 236 megawatts.

Removal of the Mattagami would create  
about 17 megawatts of added load shifting opportunity.



1 Removal of the entire hydraulic program would add  
2 something like 80 megawatts of load shifting  
3 opportunity.

4 Q. Okay. Thank you for that.

5 I just had one point of clarification  
6 then. The figure that you referred to, 51 megawatts as  
7 the contribution of Mattagami to 16-hour peaking, that  
8 is what is reflected at page E2 of Exhibit 25; is that  
9 correct?

10 [10:26 a.m.]

11 I am just trying to make sure I  
12 understand what you are posing.

13 A. Yes, it is.

14 Q. All right. Thank you.

15 All right. I would like to ask some  
16 questions of you, Mr. Burke, regarding the direct  
17 demand management impacts, and I would like to focus  
18 briefly on the social impacts of demand management with  
19 respect to the people that are represented by Moose  
20 River/James Bay Coalition and by the organizations of  
21 Nishnawbe-Aski Nation, Grand Council Treaty 3, and  
22 Teme-Augama Anishnabai.

23 During your cross-examination by Mr.  
24 Greenspoon and also in your cross-examination by Ms.  
25 Couban, I think you will recall that you stated that

1 roughly half the cost of most conservation programs in  
2 the residential sector is installation. Is that your  
3 recollection?

4 MR. BURKE: A. Yes. I think that  
5 applies particularly to residential thermal envelope  
6 upgrades or the cost of installing -- creating a better  
7 thermal envelope in new buildings.

8 Certainly, buying a new appliance does  
9 not have that same proportion, but in terms of the  
10 average for the sector, I think it is approximately  
11 correct.

12 Q. And that sort of thermal envelope  
13 upgrade, is that generally a form of local employment?  
14 I believe that was your evidence earlier.

15 A. Yes.

16 Q. All right. Now, I understand Ontario  
17 Hydro has done an analysis of the employment impacts of  
18 demand management across Ontario, and that was filed as  
19 part of Exhibit 265. I don't want to get into that. I  
20 just want to clarify that that is in fact what Exhibit  
21 265 deals with. This was a Ministry of Environment  
22 Interrogatory, 4.32.13?

23 A. Excuse me. I just have to check that  
24 we are on the same wave length here.

25 Q. It's just a point of clarification.

1 I just want to make sure that we are talking about --  
2 Exhibit 265 only deals with the provincial level  
3 employment impacts and doesn't get into local area  
4 employment. You haven't gone to that level of detail,  
5 is what I am asking.

6 A. That is true. I am just trying to  
7 find Exhibit 265, something that relates to employment  
8 impacts at all.

9 Q. Perhaps if you are looking at -- if  
10 you have in front of you, it's at page 27 and page 28  
11 under socioeconomic effects.

12 THE CHAIRMAN: Is it Interrogatory  
13 4.32.13?

14 MS. KLEER: Yes, that's it.

15 Q. Do you have the Interrogatory 4.32.13  
16 or...?

17 MR. WILSON: Yes, we do.

18 THE CHAIRMAN: It is part of Exhibit 265.  
19 Exhibit 265 is a package of interrogatories compiled by  
20 the Government.

21 MR. BURKE: We have three studies  
22 associated -- attached to that.

23 MS. KLEER: Q. All right. The study  
24 is...?

25 MR. BURKE: A. "The Environmental

1       Impacts of Demand Management Options"? Is that the one  
2       you are --

3                   Q. That's correct.

4                   A. Okay. Fine.

5                   Q. And at page 27 of that study.

6                   A. That's correct, yes.

7                   Q. Now, Ontario Hydro has not done, as  
8       far as you know, any regional level of study as to how  
9       much demand management opportunity there would be, say,  
10      in the Moose River Basin or along the northwestern part  
11      of Ontario through the Treaty 3 communities; is that  
12      correct?

13                  A. Well, as far as the potential is  
14      concerned, we did not look at it from a local  
15      perspective. It is conceivable that my colleagues in  
16      the Energy Management Branch have considered it. I  
17      will give them an opportunity to address that.

18                  Q. All right.

19                  MR. B. CAMPBELL: I'm sorry, is the  
20      question about potential or is it about the particular  
21      regional economic impacts, that kind of analysis which  
22      was done at the provincial level? I am a little  
23      confused as to what is being asked.

24                  MS. KLEER: I am asking whether or not  
25      there was a regional employment analysis done for

1 available demand management hours --

2 MR. BURKE: The answer to that is "no".

3 MS. KLEER: Q. All right. Now, if we  
4 could turn to one of the interrogatories that I  
5 referred you to, Interrogatory 6.10.3, and I am only  
6 referring to one of the attachments there. I believe  
7 you should have this in front of you, and I will ask  
8 these questions of you, Mr. Burke.

9 DR. CONNELL: What is the number of the  
10 interrogatory, please?

11 MS. KLEER: It's 6.10.3. I believe this  
12 is in your package, Dr. Connell. It's entitled "Draft  
13 Discussion Paper, Employment and Economic Development  
14 Opportunities and Barriers for the Moose River  
15 Development Proposal".

16 THE CHAIRMAN: And it should be added  
17 to...Exhibit 261, is it?

18 THE REGISTRAR: Yes, 261.58, Mr.  
19 Chairman.

20 ---EXHIBIT NO. 261.58: Interrogatory No. 6.10.3.

21 THE CHAIRMAN: Thank you.

22 MS. KLEER: Thank you.

23 Q. Now, if we can turn to page 3 of that  
24 draft discussion paper...

25 Do you have that, Mr. Burke?



1 MR. BURKE: A. Yes.

2 Q. Now, this would indicate that Ontario  
3 Hydro has done an estimate of the work force  
4 requirements over the 30-year program for the hydraulic  
5 plant, and those numbers come out to about 23,500  
6 person years for direct employment; is that correct?  
7 Is that what --

8 A. Yes.

9 Q. All right. Well, isn't it in fact  
10 the case that when Ontario Hydro goes out to tell the  
11 Aboriginal people in the Moose River Basin and across  
12 Northern Ontario with respect to the Manitoba purchase  
13 that it is thinking about building hydraulic dams and  
14 routing a 500 kV transmission line across the  
15 territory, that it tells them about job opportunities  
16 that are associated with things like the hydraulic  
17 plant and also building transmission corridors but it  
18 doesn't advise them of the regional economic  
19 development opportunities that are available with  
20 respect to demand management?

21 A. Well, I am really not aware of what  
22 Ontario Hydro advises people of in the north.

23 Q. Is anyone on --

24 MR. B. CAMPBELL: Mr. Chairman, I don't  
25 believe there will be anyone on the Panel who can



1 answer that question in the project setting.

2 With respect to Panel 7, there will be  
3 people involved in transmission projects, and with  
4 respect to Panel 6 there will be at least some  
5 knowledge of hydraulic projects as well, and it may be  
6 that those people could answer this question. I will  
7 alert them to the question if my friend wishes, but I  
8 am sure there is no one on this Panel that can deal  
9 with the projects.

10 MS. KLEER: Q. All right. Then I will  
11 leave those questions then until the Supply Options  
12 Panels.

13 If I can turn to you, Mr. MacLellan, on  
14 the question of consumer choice. I believe that you  
15 and other members on the Panel have spoken at numerous  
16 times about the fact that during program design,  
17 Ontario Hydro tries to give its customers choice and to  
18 let them decide; is that correct?

19 MR. MacLELLAN: A. That's correct.

20 Q. But isn't it the case that when it  
21 comes to supply options that choice as to whether or  
22 not a supply option gets located in a certain place is  
23 not given to the people who live in that area; is that  
24 correct?

25 A. I can't comment.

1 THE CHAIRMAN: Doesn't that fall into the  
2 same category as the previous question?

3 MS. KLEER: Well, I think that is a  
4 general question, Mr. Chairman, and it is one I believe  
5 this Panel member could answer.

6 MR. B. CAMPBELL: I don't know how they  
7 could answer...

8 THE CHAIRMAN: I think it belongs to  
9 another Panel, Ms. Kleer.

10 MS. KLEER: All right. I will pose those  
11 to the Supply Option Panels as well.

12 Q. Mr. Shalaby, if we could turn to  
13 Volume 58 of the transcript, I would like to refer to  
14 some of the answers that you gave to Ms. Omatsu during  
15 her cross-examination, and I would like to look to page  
16 10389. Do you have that in front of you?

17 [10:30 a.m.]

18 MR. SHALABY: A. Yes.

19 Q. I will just read this for the record.  
20 The question that was posed was:

21 If aboriginal people were to convince  
22 Ontario Hydro, for example, that the  
23 impact of new generation would result in  
24 great human suffering for them such that  
25 it would be unethical to ask one group to

1 pay such a high price, would there be a  
2 demand management response to this such  
3 as encouraging greater conservation?

4 And if we turn then to the next page, to  
5 the answer at the top of the page, you state:

6 If some of the supply projects are  
7 found to be unacceptable, then other  
8 parts of the plan will be adjusted and  
9 some of that adjustment could well be an  
10 increase in demand management.

11 Now, Mr. Shalaby, have we seen the  
12 analysis anywhere that supports the statement that you  
13 have made up there, i.e., that you could adjust the  
14 amount of demand management in response to changes of  
15 finding that a supply project was unacceptable?

16 A. In response to supply projects that  
17 are found unacceptable?

18 Q. Yes?

19 A. Well, we have seen in this panel an  
20 increase in demand management plan, a significant  
21 increase in the demand management plan, as Mr. Wilson  
22 announced early in the panel. That is the sort of  
23 thing that happens from time to time when opportunities  
24 are identified and when shortfalls in our demand supply  
25 balance occur. So, you witness it in action here in

1 the last several weeks.

2 Q. But aren't you seeking to get the  
3 maximum attainable demand management and if you can say  
4 you can do it because a supply project was found to be  
5 unacceptable for ethical reasons, why don't we see that  
6 analysis at this time? Why isn't that option  
7 presented? Are you looking at the maximum attainable  
8 or are you not looking at the maximum attainable?

9 A. We are looking at the maximum  
10 attainable.

11 What my answer indicated is if some parts  
12 of the plan are found to be unacceptable, then we will  
13 do something else, and that something else could be  
14 some different kind of supply, or it could be an  
15 additional demand management measure that now is not  
16 clear to us that is attainable.

17 If we entertain that question three years  
18 from now or five years from now, the situation will be  
19 different and would reassess the landscape at that time  
20 and see what is possible.

21 Q. I have a few questions for you, Ms.  
22 Fraser. If we could turn to Interrogatory 4.10.4. I  
23 believe these should be addressed to you. These are in  
24 relation to design of demand management programs.

25 THE CHAIRMAN: We will add it to 261.

1 THE REGISTRAR: 261.59.

2 ---EXHIBIT NO. 261.59: Interrogatory No. 4.10.4.

3 MS. KLEER: Thank you.

4 Q. Now, looking at question A under  
5 4.10.4, the question was:

6 Please provide studies which relate  
7 the energy needs of First Nation  
8 communities to demand management  
9 strategies. Where available, provide  
10 studies specific to each of the following  
11 categories: remote, isolated and  
12 non-isolated First Nation communities  
13 serviced by Ontario Hydro.

14 Now, the answer was that:

15 Hydro has not conducted any studies  
16 which relate the needs of First Nation  
17 Communities to demand management  
18 strategies.

19 Is that still the case, Ms. Fraser?

20 MS. FRASER: A. Yes, it is.

21 Q. Could you explain why you wouldn't  
22 focus on First Nation communities?

23 A. The planning process with respect to  
24 demand management, as we have talked about here, is to  
25 identify the potential and then move into see where we



1 can get that potential. We develop programs that apply  
2 across the province without looking at specific  
3 geographic areas or specific communities per se.

4 We do some tests in specific communities  
5 like we are doing in Espanola, but that's for very  
6 different reasons.

7 Q. I will get a bit to the Espanola  
8 example later on.

9 If we can look at part B of this  
10 question, it refers to demand management programs that  
11 are being developed in Thunder Bay by the remote  
12 community electricity system.

13 Do you have any knowledge of this, or  
14 should I not be asking you these questions?

15 A. I don't have any knowledge of that.

16 Q. All right. Just to get it on the  
17 record then while we are talking about remote  
18 communities. If we can turn to --

19 THE CHAIRMAN: Just a moment. Do you  
20 have a question about the remote community demand  
21 management program?

22 MS. KLEER: Well, I do, but I don't think  
23 that this witness can answer.

24 THE CHAIRMAN: Nor will any other panel.  
25 So, if it's something that you want to get some



1 information on, this is the time to explore that. And  
2 if it has to be done by undertaking, if there is  
3 something you want to know about it, it may have to be  
4 done by undertaking.

5 MS. KLEER: I guess we were going to do  
6 some exploring on our own on that, so I will leave it  
7 that way.

8 THE CHAIRMAN: Then you don't want to  
9 pursue this any further; is that right?

10 MS. KLEER: That's right. I just want to  
11 put at this point one other fact on the record, which  
12 is reflected in Interrogatory 4.10.8.

13 If we could have a number for that as  
14 well.

15 THE REGISTRAR: That will of 261.60.  
16 ---EXHIBIT NO. 261.60: Interrogatory No. 4.10.8.

17 MS. KLEER: Q. Now, the response to  
18 4.10.8A, B, D and G was that -- Pardon me, I am  
19 looking at the beginning of the response.

20 The response was that:

21 Hydro is developing a demand management  
22 plan for remote communities and this plan  
23 may incorporate measures that affect  
24 building insulation and ceiling heating  
25 systems, lighting and appliances.

1                   And I just wanted that to be clearly on  
2     the record, that you are looking at a demand management  
3     plan for remotes.

4                   MS. FRASER: A. Yes, that's the group in  
5     Thunder Bay, our remote community department.

6                   Q. All right. Thank you.

7                   Now, turning then to some questions about  
8     appropriate design of programs for demand management in  
9     First Nations, and I am speaking here now of First  
10    Nations that are on the grid and serviced by Ontario  
11    Hydro on the grid. Would you agree that it would be  
12    necessary to understand cultural differences and the  
13    economic base in First Nations which could affect  
14    demand management opportunities in order to design  
15    appropriate programs for these communities?

16                  A. I think that generally concurs with  
17    the approach that we take in terms of it's critical to  
18    understand the decision-makers, the decision-making  
19    process and how all that works.

20                  To the extent that we were looking at one  
21    particular community over another, that would be  
22    probably more to do with the design of the  
23    implementation strategies as opposed to the technology  
24    side of the equation in a demand management program.  
25    But those things would certainly be of interest to make

1 the programs more successful and as part of the  
2 customer satisfaction aspect that we think is very  
3 critical.

4 Q. Do you know at this time whether or  
5 not Ontario Hydro is actually consulting with some of  
6 the First Nations that are on the grid to find out what  
7 their particular needs are?

8 A. I'm not aware if any of our field  
9 operations have been doing that, no.

10 I know from a head office perspective, we  
11 do market research studies which are not specific to  
12 any one cultural group or we try and get a broad based  
13 picture of consumers across the province, whether it's  
14 residential, commercial or industrial.

15 Q. Could you undertake to find out for  
16 me whether or not your field offices are in fact going  
17 to First Nations to consult with them regarding what is  
18 appropriate, not technologies but to understand their  
19 culture and their economic base in order to develop  
20 appropriate technologies or implement appropriate  
21 technologies?

22 A. Yes, I could undertake that.

23 THE REGISTRAR: That will be 267.16, Mr.  
24 Chairman.

25 ---UNDERTAKING NO. 267.16: Ontario Hydro undertakes to

1 provide whether field offices are going  
2 to First Nations to consult with them  
3 regarding understanding their culture and  
4 economic base in order to develop  
5 appropriate technologies or implement  
6 appropriate technologies, and whether  
7 there has been any discussion regarding  
8 community walk-in freezers.

9 MS. KLEER: Q. I guess one of the things  
10 that I would ask you that you specifically address in  
11 that undertaking is whether or not there has been any  
12 discussion about opportunities to develop, have  
13 community walk-in freezers that might improve or result  
14 in energy conservation?

15 MS. FRASER: A. We can ask that question  
16 as well.

17 Q. Thank you.

18 If we can go back to Interrogatory  
19 4.10.4B, the first part of that response was that:

20 While Hydro has not developed any  
21 demand management programs specifically  
22 for isolated and remote communities, the  
23 implementation of some programs is being  
24 customized for service to these  
25 communities.

26 Could you explain what you mean by  
27 customization in that context?

28 MR. MacLELLAN: A. There are two

1 examples that I can think of right now. The first was  
2 a couple of years ago when we ran a program in  
3 conjunction with Home Hardware. We had the flier  
4 itself translated into First Nation languages by the  
5 people in Thunder Bay for use on some of the specific  
6 areas up there so that they could more fully  
7 participate in the program.

8 The other example is a program currently  
9 going on, again centered out of Thunder Bay, relating  
10 compact fluorescents. That is a program that will  
11 distribute a compact fluorescent to each of about 2,200  
12 households, certainly all in the northwestern region.

13 So, in each case it's a customization of  
14 an existing program for a specific area.

15 Q. Is that then to on-grid communities,  
16 as far as you know?

17 A. The compaction fluorescent one is for  
18 remotes. The other was for on-grid and remotes, I  
19 believe.

20 It was more related to proximity of Home  
21 Hardware stores, to be honest, just because that's the  
22 only way people could do anything about it.

23 Q. Back to you, Ms. Fraser. Would you  
24 agree that it would be appropriate in terms of  
25 designing programs that would assist aboriginal



1 communities in energy conservation, that you should be  
2 consulting with them directly about this?

3 MS. FRASER: A. Yes, I think that would  
4 be an excellent way to get the kind of customization  
5 that we would need.

6 Q. And would you agree with me that at  
7 this time, assuming that there hasn't been a high level  
8 of such consultation, just assuming for the moment,  
9 that Ontario Hydro probably is not aware of the most  
10 effective ways to conserve in Aboriginal communities  
11 without having had such consultation.

12 I guess what I am getting at is, is a  
13 First Nation community the same as Espanola, for  
14 instance? Can you make those kinds of assumptions?

15 MR. B. CAMPBELL: I don't see how, given  
16 what the witnesses have said about their limited  
17 experience in these areas, how they can possibly answer  
18 that question. I think it is encompassed, at least my  
19 understanding of the undertaking, would be that some  
20 discussion of that issue is encompassed in the  
21 undertaking. I think we could deal with it there. But  
22 I don't see how these people can fairly be asked that  
23 question; they don't have any experience on which to  
24 base that.

25 MS. KLEER: That's fine, if that can be

1 addressed in the undertaking, I am satisfied with that.

2 MR. B. CAMPBELL: That is fine.

3 MS. KLEER: Q. Perhaps again this will  
4 have to be part of your undertaking, but has Ontario  
5 Hydro been seeking to use Wawatay communications in  
6 terms of television or news public publications in  
7 order to get information out about energy conservation?

8 MR. MacLELLAN: A. In the example I used  
9 on Home Hardware, the flier was actually placed in the  
10 Wawatay Journal, and that is the publication in which  
11 it was translated.

12 I believe that has been done once since  
13 but I can't remember the specific.

14 Q. Has there been any study done of the  
15 appropriateness of the incentives that are offered with  
16 respect to First Nation communities, given that on  
17 average, the cash incomes of people in the First Nation  
18 communities are lower than in other areas?

19 A. We haven't looked at any  
20 socio-economic group that specifically in relation to  
21 our incentives, no.

22 Q. Is that something that you are  
23 planning to do or not?

24 A. We are planning on looking at low  
25 income programs in general, but as yet we haven't got

1 into, as I say, targeting that that's specific in terms  
2 of cultural and socio-economic groups.

3 Q. If we can turn to Interrogatory  
4 4.10.5.

5 What would the number be for that?

6 THE REGISTRAR: 261.61, Mr. Chairman.

7 ---EXHIBIT NO. 261.61: Interrogatory No. 4.10.5.

8 MS. KLEER: Q. Now in the response, in  
9 the second paragraph there, there is an indication that  
10 in the remote community program Hydro is developing a  
11 "How We Use Energy" poster which indicates energy usage  
12 through different household products.

13 Is developing a "How We Use Energy"  
14 poster an energy conservation measure?

15 MR. MacLELLAN: A. It is because it  
16 increases awareness of what types of products use  
17 electricity and how people use it.

18 We have had that kind of publication for  
19 a while and use it province-wide and it has proved  
20 quite popular and successful. When people are aware of  
21 how much electricity various products and activities  
22 use, then they can be more conscious of reducing those  
23 activities or decide which product to use over another.

24 Q. Would you agree this would only be a  
25 sort of first order step, it's an educational tool

1       only?

2                           A.   Educational and informational,  
3       definitely.

4       [10:52 a.m.]

5                           Q.   Now, we have heard quite a bit about  
6       the pilot program in Espanola. I am wondering whether  
7       or not Ontario Hydro has considered or is considering  
8       looking at doing a pilot program in one of the First  
9       Nations communities on the grid.

10                          Is that being considered?

11                          A.   We haven't considered it yet. The  
12       purpose of Espanola is to find out if that type of a  
13       community-based delivery mechanism actually increases  
14       the penetration rates of the various measures.

15                          We are going to be taking results of that  
16       program and expanding it province-wide, including First  
17       Nations communities that are on the grid and possibly  
18       remotes as well, but that is still in the future.

19                          Q.   Would you agree with me, Mr.  
20       MacLellan, that the most appropriate mode of delivery  
21       of programs in a First Nation community would be to  
22       train people in the communities to deliver those  
23       programs?

24                          A.   I think I would have to say we don't  
25       know that yet.

1 Q. And would you be doing anything to  
2 find out whether or not that is, in fact, the case?

3 A. Well, that would be part of the study  
4 that was referred to before and we will cover that off  
5 in the undertaking as well. As we look into the best  
6 way of delivering in those communities, that would be  
7 part of it.

8 Q. All right.

9 I believe this is you, Mr. MacLellan.  
10 There was discussion in the evidence about the Ontario  
11 Home Builders Association and that it trains and  
12 certifies R2000 builders. And we heard, I think, that  
13 there were 381 people who are currently certified and  
14 trained as R2000 builders.

15 A. Correct.

16 Q. I appreciate that this would be  
17 better asked as an interrogatory, but I didn't realize  
18 the import of it until I heard later.

19 Would you be able to undertake later to  
20 find out how many of those R2000 builders are in  
21 on-grid communities, First Nation communities, that is?

22 A. I could try to find --

23 THE CHAIRMAN: I am sorry, I don't  
24 understand the question.

25 Is it First Nation communities on grid or



1 on-grid -- is that what you mean?

2 MS. KLEER: First Nation communities on  
3 grid. That is what I am looking for.

4 MR. MacLELLAN: Now, are you looking for  
5 the number of builders in those communities or are you  
6 looking for the number of builders who are members of  
7 those communities, or does it matter?

8 MS. KLEER: Q. I would presume that they  
9 would reside in the communities. Maybe the Ontario  
10 Home Builders Association may not have that information  
11 at that level and you may come back with that answer,  
12 but I am looking for the number of certified R2000  
13 builders that are residents of First Nation communities  
14 on grid?

15 MR. MacLELLAN: A. I will see what I can  
16 do.

17 Q. All right. Thank you.

18 MS. KLEER: Could we have an undertaking  
19 for that?

20 THE CHAIRMAN: Number?

21 THE REGISTRAR: 261.62. I beg your  
22 pardon, 267.17.

23 ---UNDERTAKING NO. 267.17: Ontario Hydro undertakes to  
24 find out how many of those R2000  
25 builders are in First Nation communities  
on grid.

1 MR. B. CAMPBELL: Mr. Chairman, just to  
2 emphasize something that Mr. MacLellan said, I am not  
3 at all sure that that level of detail of information is  
4 available through the Home Builders Association or any  
5 equivalent organization. And as long as my friend is  
6 not surprised if she gets that answer, that is fine, we  
7 will take the undertaking, but I think that is a real  
8 concern in this case.

9 MR. MacLELLAN: What I could do is get  
10 the addresses of all 361 home builders if I can't get  
11 the number that you are looking for, and that may be of  
12 some use. And then --

13 MS. KLEER: I think that would be fine.  
14 I mean, I would prefer to have it worked out, but if  
15 you can get me the list of builders, that will  
16 certainly -- we can find out from there how many there  
17 are. That is sufficient.

18 Q. Has Ontario Hydro itself been  
19 involved in any programs to train builders in First  
20 Nation communities on R2000 or is that something that  
21 Ontario Hydro does not get involved in at all?

22 MR. MacLELLAN: A. No. We have  
23 contracted with the Ontario Home Builders Association  
24 to do the training for R2000, so we haven't been  
25 involved specifically.

1 Q. All right. A few other questions for  
2 you, Mr. MacLellan, relating to environmental and  
3 social impacts as part of your incentives.

4 You have mentioned that some of your  
5 survey results show a heightened sense of understanding  
6 of the relationship between energy and the environment  
7 in Canada as compared to the United States. And I  
8 believe you said at one point that you want to take  
9 advantage of that.

10 Is that your recollection?

11 A. Yes. I am not sure that was my  
12 wording, but it is the gist of it.

13 Q. Well, I will just refer you to the  
14 transcript reference, Volume 56, page 9997.

15 I believe you also said that you wanted  
16 to try in your marketing to emphasize the connection  
17 between energy conservation and a cleaner and safer  
18 environment, and the reference to that is Volume 58,  
19 page 10482. I don't think you need to look at that. I  
20 am just putting this to you.

21 A. That is fine.

22 Q. In your development of programs for  
23 marketing energy conservation, do you think it is best  
24 to let Ontarians know what the environmental costs of  
25 not conserving are as a general principle?

1                   A. I would rather turn it around and  
2     tell Ontarians the environmental benefits of  
3     conserving. You try to promote and advertise in a  
4     positive manner and say, if you do this, these are the  
5     beneficial results, as opposed to, if you don't, these  
6     are the bad things that will happen, so...

7                   Q. Well, that gets me to my point. One  
8     of the areas that you mentioned that you had difficulty  
9     with was trying to figure out how to bring in  
10    environmental and social - and I can refer you to that  
11    if you don't recall this - but do you recall saying  
12    that you were also concerned about bringing in the  
13    social impacts of energy conservation?

14                  A. Actually, I don't. I only remember  
15    saying environmental impacts.

16                  Q. All right. If we can turn then to  
17    Volume 59, page 10534. I am looking there at the  
18    middle of the page. The question was:

19                         "And would you also think it would be  
20                         important to put in that brochure some  
21                         explanation of the system-wide cost, the  
22                         environmental and social costs associated  
23                         with energy demand?"

24                  And then your answer was, and I am  
25    looking here at the bottom, at the end of your answer

1 there:

2 "We are really struggling with how we  
3 can present that to consumers in an  
4 understandable fashion but, yes, it  
5 should be there as well."

6 And pardon me, I should have referred you  
7 to the earlier part of the answer where it says:

8 "We are actually struggling with how  
9 to represent that kind of environmental  
10 and social cost in an understandable way  
11 to the public."

12 So I believe that is something you are  
13 considering.

14 A. It is certainly the environmental  
15 side. We are struggling enough with that. I really  
16 don't know how to bring in any sort of social cost,  
17 mainly because what we are trying to do in our  
18 literature is get people to take very specific  
19 measures, let's say, do some caulking around windows or  
20 doors.

21 It is difficult to relate a specific  
22 measure to an environmental or social cost. It is a  
23 bit of a broader discussion and maybe it should be  
24 taken care of in a preamble to some of our literature  
25 or in a specific brochure by itself talking about those



1 elements. Those are options that we have considered.  
2 As I say, we are still struggling with it.

3 Q. So you haven't at this point produced  
4 any brochures relating to the social cost side of  
5 energy conservation?

6 A. No. All we have done to date is in a  
7 lot of our communications say, try to introduce this  
8 idea of the reason why we want you to conserve is not  
9 only money; it is also other items, other elements:  
10 reduce long-term cost, reduce some environmental  
11 damage. As yet we haven't brought in social costs.

12 Q. Would it help you in doing your work  
13 to have some form of study that would tell you what  
14 those social costs are?

15 A. I don't think it would help us figure  
16 out how to incorporate it into a promotional campaign,  
17 but it would likely be good to know, yes.

18 Q. Mr. Wilson, I have one question for  
19 you and this should be my final question.

20 During your cross-examination by Mr.  
21 Greenspoon, you admitted that you hadn't done a good  
22 job to this point of incorporating the views of  
23 environmental groups in your strategic planning; do you  
24 recall that?

25 MR. WILSON: A. Yes, I do.

1 Q. Would you say that the situation is  
2 even worse with respect to including First Nations and  
3 aboriginal political organizations in your strategic  
4 planning?

5 A. No. I don't think we have done a  
6 good job there either, but I think part of the  
7 perspective here is that two years ago we had no  
8 programs. I think we have worked minor miracles  
9 putting broad programs in all three sectors and built  
10 the confidence and starting to build momentum. And in  
11 the process of doing so, there is a lot of people we  
12 have consulted with.

13 Our evidence is that we have consulted  
14 with the people who are best able to put the programs  
15 and services together that will make those programs  
16 work, and that has been the priority. And there are  
17 just so many of us and we have put our time where we  
18 thought it would do the most good in the first two  
19 years.

20 I believe we will be doing much more  
21 extensive consultation as we refine and customize our  
22 approach to energy management and take it down into the  
23 different niche portions of the markets where there is  
24 a unique situation and a unique opportunity.

25 That is why we have a commitment and we

1 have made it, to deal more broadly with people who have  
2 concerns about the environment. And I think you have  
3 seen in the interrogatory responses our intent to deal  
4 with the people of the remote communities who obviously  
5 don't deal with the average Ontario situation in their  
6 daily lives, to customize the energy management  
7 concepts, technologies in a way that will be most  
8 beneficial to them.

9 MS. KLEER: All right. Thank you. I  
10 have no further questions.

11 THE CHAIRMAN: Thank you, Ms. Kleer.

12 Mr. Mark?

13 MR. MARK: Mr. Chairman, I am ready to  
14 proceed. I will need just a few moments to set up, if  
15 we could take five minutes.

16 THE CHAIRMAN: All right. We will take a  
17 five-minute break.

18 THE REGISTRAR: This hearing will recess  
19 for five minutes.

20 ---Recess at 11:03 a.m.

21 ---On resuming at 11:11 a.m.

22 THE REGISTRAR: Please come to order.  
23 This hearing is again in session. Be seated, please.

24 THE CHAIRMAN: All set, Mr. Mark?

25 MR. MARK: Yes. Thank you, Mr. Chairman.

1 Before I begin, Mr. Chairman, I have prepared a package  
2 of documents which I expect we will have reference to  
3 during the cross-examination. They have been  
4 distributed and been provided to the Board and to  
5 Hydro. If we could have that marked as an exhibit.

6 THE CHAIRMAN: Yes. Number?

7 THE REGISTRAR: That will be 314, Mr.  
8 Chairman.

9 THE CHAIRMAN: Thank you.

10 ---EXHIBIT NO. 314: Package of Documents entitled,  
11 "Energy Management Programs; Development,  
Monitoring, and Evaluation".

12 CROSS-EXAMINATION BY MR. MARK:

13 Q. Mr. Burke, if I could just begin with  
14 you, if I might. You will recall back in the Load  
15 Forecast Panel, there was a fair bit of discussion  
16 regarding the difference between targets and forecasts.

17 Do you recall those discussions?

18 MR. BURKE: A. Yes.

19 Q. Regarding your estimates for demand  
20 management achievements, which you have tabled before  
21 us now - in particular, your estimates for attainable  
22 EEI, the efficiency improvements from your utility  
23 sponsored programs - do you view that as a target or a  
24 forecast?

25 A. Well, the attainable EEI numbers for

1 the two are the same and essentially, I view it as a  
2 forecast because I believe the target is both feasible  
3 and realizable in the time available.

4 Q. So it is, do I take it, not some sort  
5 of number which Hydro says it must achieve no matter  
6 what it takes to achieve it, but rather, it is an  
7 estimate based upon an optimal program you think you  
8 have in place?

9 A. No. I think the former is correct.  
10 I think the point at which targets and forecasts could  
11 start potentially to part company is as we get closer  
12 to the target date when it no longer can be said with  
13 any confidence that the targeted values may feasibly be  
14 achieved.

15 At this point in time, with nine or ten  
16 years to run before the target date and with the  
17 resources committed as they have been, it would be, I  
18 think, too early to suggest that the target was no  
19 longer feasible and so the forecast has been set at the  
20 target value. That target value may prove to be too  
21 difficult to achieve. It could prove the opposite.

22 But at this stage, the forecast is  
23 consistent with it, given the time available yet before  
24 the target date.

25 Q. Mr. Burke, in your answer, you



1 referred to your forecast being consistent with your  
2 target; is that correct?

3 Is that the way you would characterize it  
4 at this point?  
5 [11.15 a.m.]

6 A. The forecast is that the target will  
7 be achieved, yes. That's what I meant by it's  
8 consistent with --

9 Q. I am interested in this notion of the  
10 target itself, Mr. Burke, and it is perhaps a more  
11 simple question.

12 Is that what you have been calling a  
13 target, is it in reality a forecast based upon your  
14 best analysis as a forecaster of what your demand  
15 savings will be, or is it some target selected from  
16 other criteria which you then set out to meet and plan  
17 your programs to meet it accordingly?

18 A. I didn't set the target. The target  
19 was set by senior management, and I believe at the time  
20 they didn't have as much information available to them  
21 as I have now to assess the feasibility of such a  
22 target.

23 I think it was set when we had a broader  
24 sense of the potential, and I think had the target that  
25 was set proved upon closer examination not to seem

1 feasible it could have been changed, but I think I have  
2 to say that it wasn't as if we decided what a feasible  
3 path was and had all the analysis done and decided  
4 2,000 megawatts, which was the EEI number until this  
5 summer, was the best target and forecast at the same  
6 time.

7 It really did happen that the target  
8 pre-dated the forecast, and the forecast essentially  
9 was an assessment of whether or not the target was  
10 achievable in the time available.

11 Q. Indeed, is it fair to say the history  
12 of your targets in the demand management area have been  
13 set by senior management in consultation with the  
14 Government and then been passed along to the Energy  
15 Management Branch?

16 A. That's my understanding, yes.

17 Q. And the job of the Energy Management  
18 Branch over the past couple of years has been to  
19 respond to those targets, and we see the response in  
20 your programs, and what you now put before us as what  
21 you call a forecast?

22 A. Yes. Well, the forecast takes into  
23 account not just the current activities of the Energy  
24 Management Branch but also anticipated future  
25 activities and resourcing levels.

1                   Q. And as a forecaster, Mr. Burke,  
2       irrespective of the target which was set at some other  
3       level, have you approached this exercise with the same  
4       tools and rigour that you would in any other  
5       forecasting exercise in order to make your assessment  
6       of achievable and medium -- and median results and  
7       uncertainties in similar matters?

8                   A. I think I have to partition my  
9       answer. Essentially along the lines that we derive the  
10      attainable potential we go through a two-step process,  
11      looking at the potential induced and then looking at  
12      the penetration rates we expect.

13                  As far as borrowing techniques from the  
14      load forecasting process in general, the estimate of  
15      potential induced draws on the end use load forecast to  
16      estimate the amount of load in each end use, which is  
17      going to be effected, and then we do a very detailed  
18      examination assisted by information from Energy  
19      Management Branch and our Research Division and  
20      screened with the help of System Planners about the  
21      technologies and the efficiency gains we can expect in  
22      those end uses.

23                  So the potential estimates, I think, are  
24      as rigorous as we can expect with the information  
25      available today.

1                   When it comes to penetration rates, this  
2           is something where, if I would say, to -- you can make  
3           a comparison to estimating -- well, even something  
4           that's quite difficult to estimate for a load forecast,  
5           such as market shares and so on. We have much less  
6           data available on penetration rates, historically, and  
7           comparable experiences, and so I think the information  
8           before -- the evidence from this Panel is that the  
9           penetration rates are developed in Energy Management  
10          Branch, taking into account our own experience, the  
11          experience of U.S. utilities, with a heavy dose of  
12          judgment to try to assess the applicability of that  
13          experience to our context and to try to extrapolate  
14          from that experience to the kind of longer-term,  
15          perhaps more heavily financially-supported program that  
16          Ontario is planning on, relative to many of the U.S.  
17          utilities that we have information about.

18                   So I suppose, in summary, there is not  
19          really the data to do statistical analysis of  
20          penetration rates at this point, and we are looking at  
21          experience elsewhere to guide those estimates at this  
22          time.

23                   Q. But in the result, then, you have a  
24          forecast which is now coincident with the target that  
25          was set; is that fair?

1                   A. It is, and the forecast -- just to  
2     indicate that there is a certain element of  
3     independence of these two things; there are a set of  
4     conditions that we apply to that forecast laid out in  
5     Exhibit 76 in the demand management section of that  
6     Section 6, some of which at the time the forecast was  
7     made was not necessarily the practice and policy of the  
8     Corporation.

9                   We were suggesting that the level of  
10    funding and the amount of incentives per program might  
11    have to be considerably higher than was currently the  
12    case in order to achieve the target, and we were  
13    essentially expressing confidence that that would in  
14    fact become the way Hydro delivered its programs in  
15    sufficient time that the target was achievable.

16                  Essentially, what I am suggesting is we  
17    are not necessarily endorsing the target and the status  
18    quo in making a forecast. We are essentially making a  
19    prediction of what Hydro may have to do to achieve its  
20    target and whether or not Hydro is likely to do it.

21                  Q. In terms of the forecast you have  
22    developed, though, you certainly considered that what  
23    you had was, in a planning sense, an optimized DSM  
24    plan?

25                  A. Well, I am not quite sure what you



1 mean by an "optimized DSM plan".

2 Q. Well, you spoke a few moments ago  
3 about the condition that you may have to put more  
4 incentives, for example, into the programs.

5 I take it that when the programs were  
6 laid out to you as the forecaster they were presented  
7 to you on the basis that your staff or the Energy  
8 Management staff had already gone through the process  
9 of trying to find optimal incentive levels?

10 A. Well, I think that Ms. Fraser has  
11 been quite clear in her evidence that this is a  
12 learning process and that while the best estimates we  
13 have are included in the preparation of the forecast  
14 each year, the relationship of incentive levels to  
15 penetration rates is something that we just have to  
16 learn about as we do it, and we are taking steps to do  
17 that in the early years of the '90s, and hopefully we  
18 will be positioned well to deliver the forecasted  
19 results in time.

20 Q. Now, Mr. Burke, there has been a lot  
21 of discussion about the five scenarios which have been  
22 presented, and the evidence certainly has been, am I  
23 correct, that Ontario Hydro at least considers the  
24 Case E scenario to be one that could be considered  
25 draconian?

1 MS. FRASER: A. That was my word.

2 Q. That's right. And do I also  
3 understand correctly from the evidence that certainly  
4 Ontario Hydro as a utility does not advocate Case E as  
5 the appropriate planning basis for DSM in this  
6 province?

7 MR. BURKE: A. No. I don't think Hydro  
8 was advocating any scenario.

9 Of all of these scenarios, we have  
10 suggested that our new target is the value contained in  
11 Case E. Even Case C, the approach to achieve the  
12 results in Case C is considered a scenario, one way of  
13 doing it, maybe not a preferred way or anything like  
14 that, just a way.

15 And as time evolves we may find that we  
16 do things differently than described in Case C, even to  
17 achieve the 3,500 megawatt result.

18 Q. But these cases to an extent, Mr.  
19 Burke, you know, they represent in some generic sense  
20 reasonable descriptions of the types of measures which  
21 are necessary to achieve the estimates.

22 A. Well, we may have to use some of  
23 these measures. You can certainly have higher  
24 confidence in the results when standards are used or  
25 particular actions are mandated, but it doesn't

1 necessarily mean that that is the only way to achieve  
2 these results.

3 Q. I don't happen to have the reference,  
4 but, Mr. Wilson, if it is not your recollection, tell  
5 me. I rather thought your evidence to the Board was  
6 that you do not recommend Case E for adoption by this  
7 Board.

8 MR. WILSON: A. In looking at Case E, it  
9 contains measures which are so stringent and perhaps so  
10 difficult to adopt, to find the will to adopt, that we  
11 don't recommend it as a basis for planning before this  
12 Board, and we are obviously not recommending that  
13 particular course of action to anyone.

14 Q. And would you agree with me, Mr.  
15 Wilson, that some of the measures in Case E really  
16 cross that line of leaving customers with free choice  
17 about some of their energy options--

18 A. Yes.

19 Q. --to a degree you find unacceptable?

20 A. I agree with that.

21 Q. If it turns out, Mr. Wilson, that as  
22 we move forward in the decade you are falling  
23 considerably short of achieving your DSM objectives,  
24 what is the alternative that you have, maximizing the  
25 programs you believe are feasible?

1 Do we move to Case E, or do we invoke the  
2 flexibility that presumably the Corporation is building  
3 on the supply side?

4 A. I think we have addressed this topic  
5 any number of times.

6 You posited the hypothetical situation  
7 that demand management doesn't perform and doesn't  
8 deliver the results--

9 Q. Yes.

10 A. --as quickly as we are currently  
11 planning. And Ontario Hydro has a range of options,  
12 and I guess there are options beyond our own power;  
13 there are supply-side and demand-side options. They're  
14 increasingly less attractive, either in terms of cost  
15 and flexibility for everyone.

16 Q. Well, if we stay with our  
17 consideration of Case E, which we have discussed  
18 already and I think it is a rather simple question:  
19 Does Hydro and this utility, irrespective of what  
20 somebody else's views may be, if you fall short of your  
21 DSM targets so that on the load management and demand  
22 management side the only feasible alternative is Case  
23 E, does the Corporation advocate moving to a Case E  
24 scenario or does it then invoke the flexibility it  
25 presumably has on its supply options?

1                   A. I would think that because Case E  
2                   requires initiatives by the Provincial Government and  
3                   not by Ontario Hydro that we would be actively  
4                   pursuing, exploring with the Government the  
5                   implications of the whole range of supply and demand  
6                   options, if there were a crisis emerging.

7                   Q. We have got your view on the  
8                   qualitative merits, if I might say, of Case E, and  
9                   assuming as a demand management professional your view  
10                  as to the merits of that plan don't change in the next  
11                  few years, what do you then advocate?

12                  A. I think it is really a question of  
13                  how attractive all the options are. We and Government  
14                  would be looking at the pros and cons of all the  
15                  options.

16                  Clearly, if demand management results  
17                  were not obtained and load forecast developed in any  
18                  case, the basic forecast, that we would be facing  
19                  increasingly tight circumstances.

20                  [11:30 a.m.]

21                  Q. So, as we sit here today then, it's  
22                  fair to say that if we face a situation later in the  
23                  decade where there is significant underachievement of  
24                  your demand management objectives, the corporation does  
25                  not today know what the alternative is to resolve that



1 problem?

2 A. All I have said is I don't know which  
3 alternative we would choose.

4 Q. And of course, Mr. Wilson, and I  
5 don't think there is any secret about it, but you will  
6 agree with me, especially if history is any indication,  
7 ultimately this is a decision which is going to be made  
8 by the government of the province; is that fair?

9 A. I certainly think the government of  
10 the province would have an awful lot to say about the  
11 choices.

12 Q. It's certainly not going to be  
13 strictly a utility decision.

14 A. Well, there are an awful lot of  
15 suppositions built into the questions that you are  
16 asking.

17 If we had a recession that developed and  
18 ran into the late 90s, or the non-utility generation  
19 program targets were raised yet again, then it wouldn't  
20 matter perhaps what the performance of the demand  
21 management program was. There is a whole raft of  
22 things that weigh in the choice of alternatives, and I  
23 can't speculate across a large number of scenarios  
24 right now.

25 Q. One of the guidelines you have for

1 your endeavour, Mr. Wilson, is not to reduce the level  
2 of customer service; is that correct?

3 A. That's correct, yes.

4 Q. If we encounter a scenario again  
5 where your demand management objectives are not being  
6 achieved, do you foresee the corporation moving from  
7 that condition of not offering or encouraging programs  
8 which lessen quality of service and the customer's  
9 satisfaction with his electricity supply?

10 A. It would never be our intent to  
11 reduce the quality of service in any plan that we  
12 developed.

13 There clearly have been circumstances in  
14 the past, as recently as a couple of years ago, when  
15 the quality of service has been less than we wanted it  
16 to be, and that could happen again.

17 It's not a matter of choice. It  
18 certainly isn't a matter of a plan.

19 Q. I am talking specifically about  
20 demand management programs. My client in particular,  
21 Mr. Wilson, I am sure you will understand, knowing my  
22 client as you do, has always maintained that  
23 maintaining the level of quality of service to the  
24 customers of this province is foremost, and that's  
25 certainly been a condition that your branch has

1       adopted?

2                   A. Yes, it is.

3                   Q. And my client is interested to know  
4 simply this: If we move to a situation where you are  
5 not achieving your demand management objectives, would  
6 you change or remove that condition, or is that going  
7 to be a benchmark that my client can confidently see is  
8 going to remain throughout whatever your performance in  
9 the demand management area?

10                  A. I can't give you that assurance.

11                  MS. FRASER: A. As a program designer I  
12 would certainly recommend it, because I think we saw  
13 some of the conservation efforts in the 70s, sort of,  
14 you know, turn your heat down, put a sweater on, kind  
15 of reducing the level of energy service options that  
16 were advocated. Those don't last very long. I think  
17 that that's been critical to our planning so far, is  
18 to, yes, help advise the customer where things can be  
19 turned on and off more appropriately, so if you don't  
20 need the lights on, don't have them on. Certainly make  
21 appropriate uses of energy. But I think in terms of  
22 the whole issue of permanence, I think that would be  
23 the wrong way to go.

24                  Q. So, not only is the objective a  
25 laudable one from a point of principle, but in terms of

1 offering any opportunity for real improvements in your  
2 demand management targets, you say it's not likely.

3 A. Yes, I don't think it would have a  
4 long-term benefit for us, or anyone. But in terms of a  
5 demand avoidance, it wouldn't necessarily last very  
6 long.

7 MR. MARK: Mr. Chairman, I don't know if  
8 you still intend to take a morning break. This is  
9 usually about the time you do and it would be a  
10 convenient point for me.

11 THE CHAIRMAN: We are going to stop at  
12 12:30 today, so if you and the panel are prepared to  
13 hang in until that time, we don't have to.

14 MR. MARK: I am prepared.

15 THE CHAIRMAN: It's a unanimous consent  
16 situation. So, if you want the break, we will take a  
17 short break.

18 MR. MARK: I am in Mr. Campbell's hands.  
19 He is forever solicitous of his witnesses and I don't  
20 want to deprive him of that opportunity.

21 THE CHAIRMAN: We will take a ten minute  
22 break.

23 THE REGISTRAR: The hearing will take a  
24 ten minute recess.

25 ---Recess at 10:30 a.m.

1 ---On resuming at 11:45 a.m.

2 THE REGISTRAR: Please come to order.

3 This hearing is again in session. Be seated, please.

4 THE CHAIRMAN: It's better to take a  
5 fifteen minute break than a ten minute break, as it  
6 turns out.

7 Mr. Mark?

8 MR. MARK: Thank you, Mr. Chairman.

9 Q. Mr. Wilson, I want to move now from a  
10 discussion of the targets and objectives to a  
11 discussion of the measurement of the achievement of  
12 those objectives.

13 Would you agree with me, Mr. Wilson, that  
14 there is as yet insufficient data on most DSM programs,  
15 looking across North America generally, to permit firm  
16 conclusions to be drawn about how successful this  
17 resource will ultimately prove to be?

18 MR. WILSON: A. There are a lot of  
19 programs, and some of them have been in the field for  
20 over ten years in some places. The experience on those  
21 programs is that they were much less successful than I  
22 think they were initially expected to be.

23 The environment we are in in the 90s is a  
24 lot different than the one in the 80s. I think in the  
25 80s when the impetus to get into demand management



1 programs was driven by sky high oil prices and then  
2 followed quickly by natural gas prices, the enthusiasm  
3 for conservation was intense, and that was followed by  
4 falling oil and gas prices, and for utilities, surplus  
5 generation. So the enthusiasm went out and the drive  
6 and the desire to succeed I think softened  
7 considerably.

8 So, I am not sure that we can accept  
9 those results as the best basis for planning ahead.

10 In the last couple of years we have seen  
11 a big change in the regulatory environment in the U.S.,  
12 and certainly a big change in Ontario Hydro's targets,  
13 and we don't have a whole lot of track record or  
14 experience with that.

15 So, I guess I would have to agree with  
16 you that there is no seventy years of tried and true,  
17 "this is the way you do it" to demand management, that  
18 we can rely on demand management as something for sure.

19 It's been our position that we have  
20 assessed the potential, we have made the best use we  
21 can of the information around to help judge our  
22 penetration rates.

23 We stated here that our professional  
24 judgment is that we can achieve those penetration rates  
25 and that's what we are relying on.

1 Q. To put it perhaps in simple terms,  
2 it's fair to say that the jury is still very much out  
3 as to what demand reduction potential utility demand  
4 management programs truly hold?

5 A. Are you referring to the attainable  
6 or the potential?

7 Q. Attainable. I'm sorry.

8 A. Attainable. I can kind of agree.

9 Again, the reason for my conditional  
10 answer is that I have just said we don't know for sure  
11 exactly how everything is going to perform.

12 We were talking a few weeks ago about the  
13 Boston conference on demand management. There was a  
14 conference in 1989 where about 300 people turned out; a  
15 conference this year where, I don't know, was it 700 or  
16 more?

17 MS. FRASER: A. 1,200.

18 MR. WILSON: A. 1,200. There was a  
19 doubling of the activity.

20 I would say there was a whole lot of  
21 people putting their eggs in this basket. We are among  
22 them.

23 Q. As I understand your evidence, you  
24 are, in relative terms, putting more of your eggs in  
25 this basket than most utilities; is that fair?

1                   A. Well, I don't think it is. We did a  
2     study a couple of years ago, and that's on the record,  
3     it showed that Ontario Hydro had -- I think it was  
4     second only to power in terms of its demand management  
5     target for the year 2000.

6                   It's my best guess right now that we are  
7     no longer at the lead, even perhaps with our new  
8     numbers for fuel switching. We are high in the  
9     spectrum but we are not at the top.

10                  Q. Have you undertaken some new study or  
11     analysis of where you stand vis-a-vis other utilities?

12                  A. We don't have any reliable  
13     information that sort of pins us down.

14                  Q. So this is your assessment based upon  
15     just your regular contact with other DSM professionals  
16     across the continent?

17                  A. Yes, and the conversations we have  
18     with consultants.

19                  Q. But it's my understanding that as we  
20     sit here today with your knowledge of what other people  
21     are doing, your objective still is to have the most  
22     comprehensive and ambitious program of them all.

23                  A. Yes, it is.

24                  Q. So getting back to my point before,  
25     relative to other utilities, you are putting more of

1 your eggs in this basket, to use your phrase.

2 A. Well, I don't think that's true right  
3 at this minute. I think there are other utilities that  
4 are shooting higher than we are. That was the point I  
5 made just a few minutes ago.

6 I think our objective in the 90s is that  
7 posterity will look back, people in the future will  
8 look back on the 90s and say they tried to be the best  
9 in North America.

10 Q. It may not be at this moment because  
11 you say others have opted their targets, and I take you  
12 are saying you hope that by the end of your program  
13 cycle you will be at the top of that heap.

14 A. Sure. I mean, it's one thing to set  
15 targets and another thing to achieve the results.

16 Q. Sure. I am not sure why this is  
17 getting so complicated.

18 At the end the day where you hope to be,  
19 it's your plan, and using and your analogy - maybe it's  
20 not the right one - you will have, relatively speaking,  
21 more eggs in this basket. That's where you hope to be.

22 A. Yes.

23 Q. Is it also fair to say, Mr. Wilson,  
24 that by and large, you are adopting programs which have  
25 some -- which are being adopted elsewhere in North

1 America. You are using accepted programs?

2 A. Well, I will let my colleagues  
3 comment on that because they have looked at other  
4 programs more carefully than I have.

5 MS. FRASER: A. We don't just take a  
6 program developed by another utility and implement it  
7 holus bolus. We like to see what they have done, we  
8 look at the conditions here in Ontario, what is  
9 required, what are the needs and our customer group,  
10 and work from there.

11 We are covering similar technologies,  
12 obviously lighting is big one, I think something like  
13 80 per cent of the targets in commercial and industrial  
14 in the U.S. are under lighting. I think that would  
15 probably hold true for what we are doing in commercial  
16 and industrial up here as well; perhaps not quite that  
17 high.

18 The approach that we have taken to  
19 programs, I think, has been a little bit different than  
20 the traditional approach to demand management programs  
21 because we have used a strategic marketing approach  
22 rather than, sort of, a utility driven approach to both  
23 segmenting our market and designing the menu of  
24 programs. You don't find similar programs such as the  
25 residential Home Hardware coupon campaigns,



1 multi-retailer kinds of campaigns with the showerheads  
2 that were done.

3 To my knowledge I haven't discovered any  
4 utilities doing occupancy sensor program for hotels,  
5 for example, specifically a program like that.

6 What we do see is utilities moving to  
7 more comprehensive programs. We essentially in  
8 commercial and industrial started with comprehensive  
9 programs. We have certainly traded information back  
10 and forth with those utilities, but... A long answer  
11 to your short question.

12 Q. I appreciate, Ms. Fraser, that you  
13 customize programs and you look at various marketing  
14 techniques, but in terms of the technologies and the  
15 basic components of the programs, you are drawing upon  
16 essentially a catalogue of measures which is shared  
17 amongst the progressive utilities across North America.

18 A. Yes.

19 Q. Do you have any sense, Ms. Fraser, as  
20 to whether your projected penetration rates in your  
21 programs on a general basis are high relative to the  
22 ones projected by most other utilities?

23 A. When we first set the penetration  
24 rates, and those numbers are reflected in Exhibit 25, I  
25 would say that on average our penetration rates that we

1 were going after were anywhere from two to four times  
2 greater than the information that we had at that time  
3 in terms of broad based programs in those utilities who  
4 were pursuing demand management programs.

5 Since that time there certainly has been  
6 a lot of change, particularly given the changes in the  
7 regulatory incentive process in California and some  
8 regulatory direction in New York State and New England.  
9 And as a result, what we are seeing there is an  
10 expectation of comparable, or in some cases, I guess,  
11 higher penetration rates.

12 Q. When you say the changes in the  
13 regulatory - I am not sure if you used the word  
14 "structure" or "format" - are you talking about  
15 standards in mandation or are you talking about the  
16 requirements that the regulators are imposing on  
17 utility-sponsored programs?

18 A. Well, originally most of the programs  
19 that were created in the U.S., as I understand it, were  
20 created because regulatory authorities told them to go  
21 out and do this.

22 Since then the changes that I referred to  
23 is that there have been decisions to build an incentive  
24 structure for the utilities in terms of returns to the  
25 shareholders, et cetera, with respect to demand

1 management.

2 Q. But certainly, as you have said, at  
3 the outset you were considerably higher in your  
4 penetration rates?

5 A. Correct. We haven't done a  
6 comprehensive cut of that since.

7 Q. So you don't have any sense today of  
8 where you stand on that?

9 A. Not on a broad based kind of  
10 approach, no.

11 Q. Mr. Wilson, you spoke a few moments  
12 ago about the fact that back in the 80s, although it's  
13 not that long ago, generally utilities were  
14 underachieving, that's comparing their results to their  
15 objectives. Has there been any significant change in  
16 that recently?

17 [12:04 p.m.]

18 MR. WILSON: A. I guess I don't know the  
19 answer to that question.

20 Q. Mr. Wilson, I take it it goes without  
21 question that it is fundamental for Ontario Hydro to be  
22 able to accurately measure and verify the results from  
23 these programs?

24 A. I am going to disappoint you and say,  
25 no, because when you say "accurately verify", then you

1 give an impression perhaps that to get measures of  
2 success, you have to be able to measure with precision  
3 and frequently measuring with precision is neither  
4 possible nor affordable.

5 Q. It is fundamental to measure and  
6 verify the results to the greatest extent that is  
7 feasible?

8 A. It is very important to us, isn't it,  
9 that we measure our success in our programs to confirm  
10 the cost effectiveness of the designs and to identify  
11 the unexpected strengths or unexpected weaknesses and  
12 deal with them. So it is a very important part of our  
13 program design, yes.

14 Q. Is it not also important to measure  
15 the results so you can assess the return your  
16 ratepayers are getting for their investment in this  
17 initiative?

18 A. I don't think they get a return on  
19 the investment in the standard sense.

20 Q. Well, when the utility makes an  
21 investment in a supply option or some other capital  
22 investment - now, the way you measure it may be  
23 different from the way private business measures what  
24 it gets back - but will agree with me that the  
25 corporation wants to know what it is actually getting

1 for the money it has spent?

2 A. Sure, I agree.

3 Q. And your customers are certainly  
4 entitled to know that to the greatest extent that that  
5 can be determined?

6 A. Well, I object to the greatest extent  
7 because that suggests that you would perhaps go to  
8 unreasonable lengths to measure with precision.

9 I think both Ontario Hydro's Board of  
10 Directors and our customers are entitled to the  
11 assurance that the money we are spending on demand  
12 management is being spent well, being spent effectively  
13 and results intended are achieved.

14 Q. Hydro spends considerable sums of  
15 monies monitoring and assessing the results of its  
16 supply side options; that is fair, isn't it, Mr.  
17 Wilson?

18 A. Yes.

19 Q. You certainly don't advocate making  
20 any less of a contribution in terms of resources to  
21 monitoring and evaluating the results of these  
22 programs, do you?

23 A. No.

24 Q. You have reported to this Board in  
25 your evidence thus far - and I believe it may have been



1     you, Ms. Fraser, although, perhaps it was Mr. Wilson -  
2     you have reported the results that you have achieved to  
3     date?

4                     MS. FRASER: A. Correct. I indicated  
5     the results to date against a trended target to the end  
6     of July, 1991.

7                     Q. And those results, did they come from  
8     your megawatt tracking system?

9                     A. That is correct.

10                    Q. And that system is your monitoring  
11     procedure?

12                    A. That is part of our monitoring  
13     procedure.

14                    Q. And in this business, as I understand  
15     it, Ms. Fraser, there is a difference between what is  
16     called monitoring and what is called evaluation?

17                    A. Yes.

18                    Q. All right. The results you gave us  
19     came from your monitoring function?

20                    A. Correct.

21                    Q. Do you have a separate or have you  
22     yet implemented your evaluation function?

23                    A. We do a net impact evaluation.

24     Exhibit 76 represents the results of that that has been  
25     done to date. It is something that we do on an annual

1 basis as opposed to a monthly basis.

2 Q. Sorry, Exhibit 76, the net load  
3 impact forecast of demand management programs?

4 A. That is correct.

5 Q. All right. And where in this do I  
6 find your evaluation process for these programs?

7 A. I will let Mr. Burke speak to where  
8 it is.

9 MR. BURKE: A. Well, if you are  
10 referring specifically to the evaluation of past  
11 performance--

12 Q. Yes.

13 A. --assuming the results for 1989 are  
14 included in Exhibit 76, that is the final estimate of  
15 the net load impact of demand management. The --

16 Q. I am sorry, let me just stop you  
17 there.

18 And that comes from your megawatt  
19 tracking system?

20 A. No. There is a process of moving  
21 from gross megawatts, which is the product of the  
22 megawatt tracking system - that is, the megawatts saved  
23 by the customer - to an estimate of the net load impact  
24 which takes into account any factors which could  
25 influence the extent to which those megawatts might

1 otherwise have occurred.

2 Q. Isn't that just an accounting for  
3 line losses and those sorts of things which explain the  
4 difference between the savings you get at the  
5 distribution end and the savings you get at the  
6 generation end?

7 A. No. There is another element and  
8 that is free ridership.

9 Q. Yes.

10 A. Attempting to assess the proportion  
11 of those savings which would have occurred anyway.

12 Q. Yes.

13 A. And that is also netted out of the  
14 numbers that come out of the monitoring system.

15 Q. So thus far what we have is to move  
16 from the megawatt results you get from your megawatt  
17 tracking system to the net impact numbers reported; we  
18 take into account line losses and we net it out for  
19 estimates of free ridership?

20 A. Yes. I think the pattern of that is  
21 indicated in the appendices. Each of the appendices  
22 has a table, but that table refers specifically to what  
23 were for Exhibit 76 forecast years.

24 There was only one year of history at  
25 that point, 1989, and given the difference in the small

1 number of programs in 1989, they weren't written up  
2 that way here.

3 THE CHAIRMAN: What table are you looking  
4 at, Mr. Burke?

5 MR. BURKE: For instance, Appendix A1,  
6 page -- it is page A1, there is a table for the  
7 residential sector; Appendix B1, there is a table for  
8 the commercial sector; and Appendix C1 gives a table  
9 for the industrial sector and translates the gross  
10 customer level forecast down to net system level.

11 And I should point out that in these  
12 tables, and this is again in the forecast period as  
13 opposed to the evaluation, so if I am going too far,  
14 just stop me.

15 Q. Well, what I am interested in, Mr.  
16 Burke, I take it that the megawatt results that you  
17 work with and that are reflected at the gross level in  
18 this document, Exhibit 76, those come from the megawatt  
19 tracking system?

20 A. Yes.

21 Q. All right. And they are the results  
22 of your monitoring procedure, correct?

23 A. Well, yes.

24 MS. FRASER: A. Correct, and our  
25 management targets are based on those as well.

1                   Q. All right. And do I understand your  
2 evidence correctly that you don't apply to your  
3 monitored results a separate process of impact  
4 evaluation which I understand is the standard procedure  
5 in the industry?

6                   MR. WILSON: A. I think the answer is,  
7 yes.

8                   Q. Is it anything more than what Mr.  
9 Burke has just told me about?

10                  A. I think I need to elaborate on what  
11 he said, and there is one more element. Let me deal  
12 with that element first.

13                  The megawatt tracking system collects  
14 information continuously and reports monthly on the  
15 progress of load saved and load shifted through each of  
16 the programs that are in the field.

17                  At year end, there is an evaluation  
18 performed which is an evaluation of the results of the  
19 year, not of the specific programs. And that is the  
20 information which Mr. Burke has just referred to as  
21 been available for 1989 and is now available for 1990.

22                  There is an audit of the reported  
23 results. The audit examines a number of questions and  
24 physically confirms the installation of equipment to  
25 make sure that it is there and it is being used and it



1 is working properly and so on.

2 It also examines questions of any errors  
3 in estimation or reporting errors and mistakes of that  
4 character, of mischaracterization or timing errors.

5 In particular, close to year end, there  
6 are instances sometimes of a project being completed  
7 but not reported until the following years and  
8 consequently been miscast. That kind of thing is  
9 picked up.

10 Any market research that has been done to  
11 establish or confirm free-riders or, in some cases,  
12 estimates of results that didn't get reported but were  
13 observed, those are taken into account.

14 So we move from a year-end piece of data.  
15 We completely audit and then we go back into the  
16 consideration of the assumptions, developing  
17 information from market research which can change our  
18 estimate of free ridership from the ones that were  
19 initially assumed when the program was designed.

20 All in all, this takes six people about  
21 three months to accomplish, which is sizing up how we  
22 really did last year as best we could tell.

23 Q. So this is an analytical function  
24 that is performed by your people in the office?

25 A. That is correct, based on market

1 research and field verification of installations.

2 Q. And have you told me all the elements  
3 of your evaluation process?

4 A. Well, there is metering work that is  
5 carried out as part of the before and after in some  
6 programs but not all. There is both end use as well as  
7 billing analysis. And certainly on the load shifting,  
8 there is sort of a three-pronged approach for the  
9 evaluation.

10 One was a survey of large customers to  
11 establish their intentions to respond to rates and  
12 shift load. There's field reports that our field staff  
13 have discussed load shifting with their clients and  
14 reported the clients have taken action. And for these  
15 large customers, there is a billing analysis which  
16 confirms that the pattern of consumption has changed.

17 And those three pieces of information are  
18 assembled and they are frequently not 100 per cent sort  
19 of in agreement and where there are serious questions,  
20 those are probed back with the customer.

21 It is quite an intense exercise working  
22 with Mr. Burke's staff so that we can establish as best  
23 we can what the corporation got for its money that  
24 year.

25 Q. Maybe we can take a step back. Would

1 it be fair to say that your monitoring function is  
2 essentially - it is an accounting function; is that  
3 fair? That is generally what the monitoring is?

4 A. It adds up what is reported, yes.

5 Q. That's right. And for that, you rely  
6 upon your reports from your representatives of the  
7 field who essentially tell you, "I went to this  
8 customer; he installed this measure at this time." And  
9 initially, you apply an engineering estimate to that  
10 and you come out with a number at the end of the  
11 calculation?

12 MS. FRASER: A. That is for some of  
13 them. Part of what feeds into the megawatt tracking  
14 system is the financial incentive data base.

15 Q. Yes. And you want to record that  
16 information as well?

17 A. That's right.

18 Q. It is essentially a recording  
19 function?

20 A. That's right.

21 Q. And when you speak of the audit of  
22 that function, Mr. Wilson, I take it what you are  
23 referring to is the practice of essentially having an  
24 auditor go in there and sample the responses and see  
25 whether the recorded information is accurate on its own

1 terms; that is, as accurately reflecting the date of  
2 installation, the number of appliances, et cetera?  
3 [12:20 p.m.]

4 MR. WILSON: A. Yes, that's right.

5 Q. And Ontario Hydro, I gather from your  
6 evidence, recognizes that it is essential in this  
7 business to have a further and separate process which  
8 is generally known as "impact evaluation"; is that  
9 fair?

10 A. Yes, it is.

11 Q. And that is a process by which you  
12 actually do in-field verification and take other  
13 measures to assess the actual impact as opposed to the  
14 presumed impact which you get from an application of  
15 your recorded information to your engineering  
16 estimates?

17 A. Yes, that's true, and I would just  
18 add that to a certain degree, both for long-range  
19 planning purposes and for program design purposes,  
20 in-field assessment of the performance of these  
21 technologies is done as part of the design or  
22 long-range planning. So we don't wait until the  
23 program has been out there for a while.

24 Q. But, as I understand it, Mr. Wilson,  
25 the Corporation has not yet developed its evaluation

1 program.

2 A. I think that's incorrect. What we  
3 have said is that there is no one way to do evaluation  
4 across all sectors and all programs.

5 Q. Mr. Wilson, in Exhibit 314, if you  
6 could turn to please to page 15, which is your response  
7 to Interrogatory 4.9.7, and, in fact, if you look back  
8 to the previous page you will see the question was:

9 Please provide descriptions of  
10 program monitoring and evaluation plans,  
11 including information on the role of  
12 retailers in supporting these plans.  
13 Now, looking at your response, if we look  
14 at the eighth paragraph which is about two-thirds of  
15 the way down the page, it says:

16 An integrated program evaluation  
17 process is now under development and will  
18 consider specific program impacts and  
19 delivery effectiveness.

20 And it goes on to say:

21 The evaluation process will address  
22 delivery of customer energy management  
23 programs and net calculation of net  
24 megawatt reductions achieved through each  
25 program.



1                   So, Mr. Wilson, isn't it the case that  
2                   you are just now in the process of development of your  
3                   program evaluation process?

4                   A. Well, I note that the  
5                   interrogatory -- I do have to say that this is  
6                   characterizing this accurately enough in that  
7                   evaluation is in its early days for us on a  
8                   comprehensive basis, individual programs with  
9                   evaluation elements from the outset, but this  
10                  interrogatory was answered in February of this year.

11                  Q. Yes.

12                  A. And I think that was an accurate  
13                  statement of the situation in February, and you just  
14                  asked me whether we have a plan and I have said we do.

15                  Q. So when was that plan developed?

16                  A. Since February. In fact, we were in  
17                  the process of developing it at that time.

18                  Q. And do we now have this impact  
19                  evaluation plan? Does it exist?

20                  A. A plan consists of a number of  
21                  elements which are plans for the evaluation-specific  
22                  programs, a timetable for pursuing those plans, and the  
23                  necessary activities that are -- we are in the  
24                  budgeting process right now - at least, the people that  
25                  are here are - and we are increasing our resources for

1 evaluation from around \$2-1/2 million a year probably  
2 towards \$6 million a year.

3 We have set our priorities. We are  
4 getting on with the job.

5 Q. I am not sure you have answered my  
6 question, Mr. Wilson. You have acknowledged it's  
7 important in this industry that there be an impact  
8 evaluation process.

9 A. Yes.

10 Q. And I would like to know if the  
11 Corporation now has a plan, a program, something we can  
12 look at and say that these are the protocols and the  
13 procedures that Ontario Hydro follows to provide the  
14 world with the net impact results of its programs.

15 A. Well, I think we could answer that in  
16 general terms. We can't answer it in specific terms  
17 for all the programs.

18 THE CHAIRMAN: Perhaps just to help me,  
19 Mr. Wilson, looking at the paragraph that Mr. Mark  
20 referred to in Interrogatory 4.9.7, which said that  
21 integrated program evaluation process is now under  
22 development and will have certain characteristics,  
23 what, if anything, has changed since that answer was  
24 made in February of this year?

25 MR. WILSON: Since February we have

1 developed a number of evaluation plans for specific  
2 programs, identified the tasks that have to be  
3 executed, assigned the budget and responsibility for  
4 executing those tasks and initiated a number of those  
5 tasks. That's what has changed.

6 MR. MARK: Q. I take it, Mr. Wilson,  
7 from that answer though that you haven't yet developed  
8 a standard, branch-wide evaluation protocols.

9 MR. WILSON: A. Well, I guess there is  
10 no document that states a set of protocols. There is a  
11 document that states the objectives of evaluation or to  
12 answer the following -- answer questions in the  
13 following five areas.

14 The accountabilities for executing parts  
15 of this work are assigned, the expectation and  
16 certainly the only realistic course is to develop an  
17 evaluation plan for each program, and where a program  
18 takes the character of the promotion of energy  
19 efficient products through multiple hardware stores  
20 across Ontario, you clearly go about the evaluation of  
21 that very differently than you do when you are doing  
22 commercial lighting, so I guess there is no canned  
23 solution to evaluation.

24 Q. Is it Hydro's intention to have a  
25 formal procedure to provide consistent evaluations

1 across programs?

2 A. Yes.

3 Q. And is that a procedure which is  
4 being developed now?

5 A. Yes.

6 Q. All right. And we don't yet have the  
7 final product of that?

8 A. That's correct.

9 Q. And so what you presently have is an  
10 ad hoc evaluation program by program without having  
11 established branch-wide, standardized methods?

12 A. I think the evaluation plans we have  
13 now reflect the priorities expressed in this draft  
14 procedure. The paperwork hasn't caught up with reality  
15 yet.

16 Q. Well, all right. Then I am confused  
17 whether --

18 A. I'm sorry.

19 Q. Do you have a draft document which  
20 sets out your standardized methods to provide  
21 consistent evaluations across programs?

22 A. Yes.

23 Q. When was that document prepared?

24 A. The first draft I think was produced  
25 in May.

1 Q. Can you provide us with that?

2 A. I would rather -- no, I can't do that  
3 until it's approved.

4 Q. When do you expect it to be  
5 finalized?

6 A. I would think probably within the  
7 next two months.

8 Q. Could I have your undertaking to file  
9 it with us when it is approved?

10 A. Yes.

11 THE CHAIRMAN: That will be number...?

12 THE REGISTRAR: 267.18.

13 THE CHAIRMAN: And while we are at it,  
14 261, we should put Interrogatory 4.9.7 on the list.

15 THE REGISTRAR: That will be 261.62.

16 THE CHAIRMAN: Thank you.

17 ---UNDERTAKING NO. 267.18: Ontario Hydro undertakes to  
18 provide the draft document setting  
19 out standardized methods to provide  
consistent evaluations across  
programs.

20 ---EXHIBIT NO. 261.62: Interrogatory No. 4.9.7.

21 DR. CONNELL: May I just clarify? I am  
22 experiencing some deja vu.

23 Could I refer to Volume 60, page 10765.

24 MR. WILSON: The page reference, please?

25 DR. CONNELL: 10765. The interrogatory



1 that is cited here is 261.48. Is that the same  
2 interrogatory that is cited in the current discussion?

3 THE CHAIRMAN: That is 4.24.80.

4 MR. MARK: 4.24.80, Mr. Chairman, you can  
5 find at page 16 of my package of exhibits, if it will  
6 be of assistance.

7 DR. CONNELL: Right. Anyway, the quote  
8 from that interrogatory is on page 10765, line 8, is:

9 Hydro does not yet have standard  
10 methods for DM program evaluation.

11 And a response, I think from you, Mr.  
12 Wilson, was:

13 "I think that we will probably have  
14 that completed over the next few months."

15 MR. WILSON: I hope I have said the same  
16 thing just now.

17 DR. CONNELL: It is the same subject we  
18 are talking about?

19 MR. WILSON: It is the same subject, yes.

20 THE CHAIRMAN: Perhaps we can now  
21 adjourn, and we will adjourn now until 2:30, this  
22 afternoon.

23 THE REGISTRAR: The hearing will adjourn  
24 until 2:30.

25 ---Luncheon recess at 12:32 p.m.

1 ---On resuming at 2:34 p.m.

2 THE REGISTRAR: Please come to order.

3 This hearing is again in session.

4 THE CHAIRMAN: Mr. Mark?

5 MR. MARK: Thank you, Mr. Chairman.

6 Having been abandoned by my own consultant, I will  
7 sally forth nonetheless.

8 THE CHAIRMAN: You are not completely  
9 abandoned. (Laughter)

10 MR. MARK: Q. Panel, we were discussing  
11 before the luncheon recess the issue of evaluation, and  
12 I want to see if we can possibly tie this up  
13 succinctly. (Laughter)

14 MR. B. CAMPBELL: I have warned them  
15 about this. (laughter)

16 MR. MARK: It's either a test of myself  
17 or your ability to follow Mr. Campbell's instructions.  
18 I am not sure which.

19 MR. B. CAMPBELL: I have more clout in  
20 the end in this than you do.

21 MR. MARK: Q. The first step of the  
22 procedure is the monitoring, which is the collection of  
23 data, and that's the megawatt tracking system; do we  
24 have that right?

25 MS. FRASER: A. Well, I think if we were

1 not really talking steps in a procedure here, but if  
2 you wanted to look at the whole gamut of evaluation, it  
3 starts before we even design the program.

4 This gets back into the whole question of  
5 engineering estimates, and a lot of -- when we start  
6 the program we do research in order to find out certain  
7 impacts and effects.

8 Q. No, I understand that, Ms. Fraser,  
9 and I think we are all familiar with that, and I don't  
10 mean to suggest that you go into a program before you  
11 have gotten some engineering estimates.

12 What I want to concentrate now on --

13 A. Well, we also get actual, verified,  
14 monitored results, sometimes before we get into a  
15 program as well.

16 Q. Those are results you get from some  
17 test installations perhaps?

18 A. Yes, correct.

19 Q. But they are not actual results from  
20 participant installations?

21 A. Correct. We are testing the  
22 equipment.

23 Q. All right. Okay. So we have the  
24 first step, which is monitoring, which is the recording  
25 of data, and that presents itself in the result in your

1 megawatt tracking system?

2 A. Correct.

3 Q. Then, as I understand it, Mr. Burke  
4 will make some adjustments to those figures for load  
5 forecast purposes?

6 MR. BURKE: A. Well, as you recall from  
7 the OEB discussions, not just myself, it involves a  
8 group of people.

9 Q. Mr. Burke, you will appreciate when I  
10 say "you" I don't mean you personally, but --

11 A. No, but it's not just my division.  
12 It involves people from Energy Management Branch as  
13 well. So I thought it was important to make that  
14 clear. And, yes, we get to the point of getting a net  
15 estimate.

16 Q. All right. And going back to the  
17 Energy Management Branch, you then take the results  
18 from the megawatt tracking system and you feed them  
19 into an impact evaluation process; correct?

20 MS. FRASER: A. Correct. There is --  
21 well, there is really two processes at work here.

22 One is an annual process, and a  
23 verification process, and an auditing process that Mr.  
24 Wilson talked about, and then there is something  
25 program-specific that depends on the life of the

1 program and the dynamics of the program. And we do  
2 some of that evaluation as we go through in terms of  
3 how can we best fine-tune the program, in terms of the  
4 way it operates.

5 Those are best described as process  
6 evaluations. Sometimes it happens during the program;  
7 sometimes it will happen after.

8 Q. I am particularly concerned about--

9 A. -- then the impact evaluation.

10 Q. --impact evaluations. Whether you  
11 use those to help you make mid-course corrections or to  
12 actually measure as best you can the net savings in the  
13 result. What you do is, you take your results from  
14 your megawatt tracking system and then they form the  
15 basis of your impact evaluation process?

16 A. That is what you are essentially  
17 checking against in the impact evaluation.

18 Q. That's right. In the impact  
19 evaluation, what you want to do is carry out tests and  
20 other forms of analysis to actually verify that the  
21 results being kicked up by your megawatt tracking  
22 systems are in fact the load reductions you are  
23 achieving in the field?

24 A. Yes, did you get what you thought you  
25 did.



1 Q. And do I understand, Mr. Wilson, from  
2 our discussion this morning that although you have not  
3 yet finalized your branch-wide impact evaluation  
4 standards process, you have been doing some impact  
5 evaluations on an ad hoc basis?

6 MR. WILSON: A. Yes, that's right.

7 Q. And my question then is: Have you  
8 reported anywhere the results of those impact  
9 evaluations?

10 A. I am not aware of any reports  
11 prepared by my staff on specific programs as -- in  
12 terms of certain mid-term reports outside of the  
13 assessments that I explained to you are fairly  
14 exhaustive, using the best research that's available to  
15 that point for annual assessments.

16 We have got work that's on-going for the  
17 longer term -- actually not in the longer term but for  
18 specific programs characterized as ad hoc.

19 Q. Let me put it simply.

20 A. Yes.

21 Q. The results that you have reported to  
22 this Board in your evidence are the results that come  
23 from the megawatt tracking system.

24 Now, you have told us that in addition to  
25 that monitoring procedure and the results you get from

1 that you perform impact evaluations to actually verify  
2 your results?

3 A. Yes.

4 Q. And so my question is: Have the  
5 results you have been reporting in any respect been  
6 verified by your impact evaluation process?

7 A. And Mr. Burke explained this morning  
8 already that the 1989 results, net impact, with all the  
9 best information available, is reported in Exhibit 76.

10 Q. Yes, but I am talking about your more  
11 recent figures.

12 A. Well, the results for 1990, is that  
13 what you are asking about, or current?

14 Q. Or current. The results that you put  
15 before the Board are the megawatt tracking system  
16 results, and you have said: Here is what we have  
17 accomplished to date.

18 We see that you have impact evaluation  
19 measures in place to verify the results of your  
20 megawatt tracking system. My question is simply: What  
21 do those impact evaluation steps tell us, or have they  
22 told us anything about the megawatt tracking system  
23 gross reports?

24 A. Yes, they have.

25 Q. Yes? And where - can you assist me -

1 is it available? Has it been filed? Does it change  
2 the numbers?

3 A. To the best of my knowledge, the  
4 results, the net impact assessment for 1990, has not  
5 been filed.

6 Q. All right. Does that exist?

7 A. Yes.

8 Q. Could that be filed?

9 A. Yes, it could.

10 Q. Can you assist me in telling me what  
11 were the differences between the results reported by  
12 your megawatt tracking system and the results you got  
13 from your net impact analysis on the 1990 results?

14 MR. BURKE: A. I think the difficulty we  
15 are having, whilst somebody looks for some numbers --

16 THE CHAIRMAN: Just a moment. Let's just  
17 get this question answered first, and then we can talk  
18 about the difficulty.

19 MR. BURKE: Okay.

20 MR. WILSON: In 1990 the megawatt  
21 tracking system recorded about 221 megawatts of load  
22 reduction. That's a combination of fuel switching,  
23 efficiency improvements, and load shifting.

24 MR. MARK: Q. I'm sorry. Just let me  
25 stop you there.

1 MR. WILSON: A. Yes.

2 Q. Those are utility programs, though?

3 When you talk about fuel switching, it's clearly a  
4 Hydro program. It's not because of any --

5 A. That's correct, yes. It's not based  
6 on the use of incentives, no. I see your point.

7 The net impact, leaving fuel switching  
8 aside, for electrical efficiency improvements was 112  
9 megawatts and for load shifting was 54 megawatts for a  
10 total of 166 megawatts.

11 Q. All right. Now, I want to make sure  
12 that I am looking at apples and apples here. 221  
13 included --

14 A. Was the megawatt tracking system  
15 report.

16 Q. But that included fuel switching?

17 A. The results of information programs  
18 or information provided to customers which resulted in  
19 reported fuel switching, yes.

20 Q. Can you give me the comparison for  
21 the numbers for EEI--

22 A. Yes.

23 Q. --megawatt tracking system reports  
24 and your net impact?

25 A. Yes, the number of the tracking

1 system reported was 162 megawatts.

2 Q. Yes?

3 A. And I have already given you the net  
4 impact of 112.

5 Q. So your megawatt tracking system  
6 reported 162, and your results after doing your impact  
7 evaluation was 112?

8 A. Yes, that's right. And the load --

9 Q. And what about load shifting?

10 A. Reported 59.

11 Q. Yes?

12 A. And the net was calculated to be 54.

13 Now, you recall the technical definition.  
14 Megawatt tracking system reports are -- records results  
15 as measured at the customer's meter, and the net is  
16 measured at the generation bus-bar, so that line losses  
17 and transmission losses are part of the calculation to  
18 get to the net.

19 THE CHAIRMAN: Are you talking about  
20 that's the difference between the 162 and 112; is that  
21 what you mean?

22 MR. WILSON: That's correct, yes.

23 THE CHAIRMAN: Do I take it the  
24 difference between 221 and 162 is attributed to fuel  
25 shifting -- fuel switching, I mean?



1 MR. WILSON: Yes, that's part of the  
2 explanation, yes.

3 THE CHAIRMAN: Is it the major part of  
4 it?

5 MR. WILSON: Yes, it is. Well, just give  
6 me a moment, please.

7 MR. MARK: Sure. Yes, I think that  
8 probably is the major contributor to the difference  
9 between the two.

10 Q. Have you yet done your net impact  
11 evaluation on the July figures which you recently  
12 reported to this Board?

13 MR. WILSON: A. No, we won't do that for  
14 1991 until the spring of 1992.

15 DR. CONNELL: Excuse me, Mr. Wilson.

16 MR. WILSON: Yes?

17 DR. CONNELL: Fuel switching came up  
18 here. Are we really talking about fuel switching?

19 MR. WILSON: Yes, we are.

20 We testified a few weeks ago that  
21 although the Power Corporation Act doesn't permit us to  
22 provide incentives to encourage people to use gas  
23 instead of electricity, for example, that has not  
24 stopped our Customer Service people from suggesting to  
25 customers that they consider their options, and

1 seriously consider their options.

2 We have gone out of our way, in fact, in  
3 many cases, in our best judgment, that a customer would  
4 be far better off with gas than electricity, to be very  
5 forceful to that point, but we are not able to provide  
6 incentives to push them even harder.

7 DR. CONNELL: But are you classifying  
8 this -- we are talking about 1989?

9 MR. WILSON: In 1990 -- oh, I  
10 characterized that as something which is reported as an  
11 activity which had been completed in 1990.

12 I did not include the fuel switching  
13 results in the net impact because Mr. Burke in his  
14 basic forecast makes assumptions about a certain amount  
15 of natural migration from electricity to natural gas,  
16 and we are not able to discern at this point whether or  
17 not with certainty that we have achieved a net impact  
18 with the fuel switching information, and because we are  
19 conservative in the way we handle our reporting, we  
20 haven't counted it as a net impact.

21 DR. CONNELL: So it shows up and  
22 essentially is a correction, does it, on EEI? You are  
23 netting it out then?

24 MR. WILSON: We are treating it as  
25 already having been captured in the assumptions of the

1 basic forecast.

2 DR. CONNELL: Okay.

3 MR. WILSON: And not, consequently, a  
4 consequence of the marketing efforts of Ontario Hydro.  
5 That may not be in fact the case, but we are  
6 conservative as to what we keep score on.

7 THE CHAIRMAN: Now, I interrupted Mr.  
8 Burke who was about to talk about a difficulty that he  
9 saw.

10 MR. BURKE: Well, I guess the thing that  
11 I wasn't clear in the questions that were being asked,  
12 there was -- there is a target for gross megawatts and  
13 reporting against that.

14 There is also a forecast of net megawatts  
15 and actuals of net megawatts, and it wasn't clear to me  
16 which you were interested in.

17 MR. MARK: Q. Well, I do want to get to  
18 that, and I was going to go back and ask, and I was  
19 going to ask Ms. Fraser but if you can deal with this,  
20 Mr. Burke, that's fine.

21 Ms. Fraser, you may have to refresh my  
22 memory, but what were the targets and the results you  
23 reported as of July? I'm sorry if it's repetitious,  
24 but let's just make sure we have the numbers.

25 [2:49 p.m.]

1 THE CHAIRMAN: I think this is an answer  
2 to an undertaking, isn't it, somewhere?

3 MS. FRASER: Yes, it was. I was just  
4 looking for it. The total, including load shifting and  
5 EEI, the trended target on a consistent basis was 120.6  
6 megawatts and the trended results to the end of July  
7 was 161.7 megawatts.

8 MR. MARK: Q. And your 120.6 target, was  
9 that gross or net?

10 MS. FRASER: A. It is gross. Those are  
11 on a consistent basis. These are management targets  
12 that we use to run the business on a day-to-day basis.

13 Q. And what was your target for net  
14 reductions?

15 A. That I have to turn over to the net  
16 people.

17 MR. WILSON: A. We don't have  
18 month-by-month targets for net.

19 Q. Do you have a year-by-year?

20 A. Yes, and they are found in Exhibit 76  
21 at the moment.

22 Q. All right. So in Exhibit 76, your  
23 annual targets are net?

24 MS. FRASER: A. Those are really  
25 forecasts as opposed to targets, right?

1 MR. WILSON: A. Those are --

2 Q. Well, when I get the 1991 results of  
3 your megawatt tracking system, Ms. Fraser, where do I  
4 find your targets on an apples-to-apples basis?

5 MS. FRASER: A. Well, that is what I  
6 mean. The apples-to-apples part is done on a gross  
7 basis because that is the most meaningful way in which  
8 to run our business on a day-to-day basis.

9 Q. So, you do not have a target for net  
10 megawatt impacts for 1991?

11 A. The forecast would be as close as you  
12 could -- if you wanted to make it a proxy for our  
13 target, it would be the same thing.

14 Q. All right. So you have one number  
15 and that is the forecast number?

16 A. Correct.

17 Q. All right. Because you say it is a  
18 forecast rather than a target, that is the comparison  
19 one should look at, at the end of 1991, to see how you  
20 have done, is it not, your results versus that  
21 forecast?

22 A. The net impact is really -- if you  
23 are talking about the bottom line, yes.

24 Q. Yes.

25 A. However, managing the business on a



1 day-to-day basis, it is not very meaningful to sit down  
2 on every lighting project and say, oh, a certain  
3 percentage of this would have been a free rider. I  
4 mean there is reality involved here.

5 Q. But to the observer who wants to know  
6 how you are doing at the end of year, that is a fair  
7 comparison, is it not?

8 A. I think both of them are critical.

9 Q. Okay. But I want to be sure. My  
10 point is, Ms. Fraser, I don't want somebody to tell me  
11 after 1991 that it is a meaningless comparison to look  
12 at your forecast of net impacts against your actual net  
13 impacts as verified through your evaluation process.

14 A. No, I wouldn't say that was  
15 meaningless.

16 Q. Okay.

17 MR. WILSON: A. I want to add to this,  
18 to this point. The short-term forecast for demand  
19 management results does reflect a very intense effort  
20 with participation from the forecasting staff and the  
21 energy management staff to translate the business plan  
22 of the branch of energy management into net impact  
23 estimates. And, in fact, those are adopted, unless I  
24 am corrected on this, as the forecast.

25 Now, Mr. Burke has testified that as we

1 move ahead in time, we may, in energy management, have  
2 targets that he feels may not be attainable and at some  
3 point in time, the forecast could diverge from the  
4 targets of energy management.

5 But today --

6 Q. Go ahead.

7 A. Okay. There may be some time when we  
8 have objectives to accomplish that he doesn't believe  
9 are attainable and his forecast will be his best  
10 judgment as to what will be attained, not what should  
11 be attained. But today they are the same number.

12 Q. But what about your own energy  
13 management forecasts? I just want to be sure, Mr.  
14 Wilson, that as we go through the process, your branch  
15 has some standard by which you can measure the  
16 achievement of your initiative.

17 A. Well, as Ms. Fraser has explained and  
18 perhaps I will elaborate, when we plan ahead for the  
19 next five years, we set out to develop business plans  
20 which will accomplish the objectives of the corporation  
21 in net terms.

22 The business plans are expressed in terms  
23 of the results that will be experienced by a customer  
24 service staff doing business with customers, with  
25 municipal utilities and with decision-makers all

1 through Ontario. So, that is what we can track.

2 Q. So, it is those targets that are in  
3 your business plan which will continue to be your  
4 benchmark for measuring your performance?

5 A. They are one benchmark. They are an  
6 important benchmark and the one against which, from  
7 month to month, you can say I am doing well or I am not  
8 doing well.

9 But ultimately, one has to sit back, and  
10 with research results - which don't arrive  
11 continuously, they arrive when you completed your  
12 various studies - you look back on the results of the  
13 last six months or the last year and a half in a  
14 program and draw conclusions about whether your  
15 estimates of free ridership of utilization rates and so  
16 on were reasonable or whether they need to be  
17 reconsidered. And when you have that information at  
18 hand, you do a net impact analysis and you do that from  
19 time to time.

20 So far, we have done it at year end each  
21 year. And as we gain more experience with programs and  
22 we have -- our priority has been to get programs in the  
23 field, not to spend time worrying about how to measure  
24 them, you know, in the fine details.

25 Q. And have you drawn any conclusions

1       thus far from the net impact analyses that you have  
2       done?

3                   A. Yes. That the programs, both in  
4       gross and net terms, are tracking quite well against  
5       our plans for the 1990s.

6                   Q. And is this summarized somewhere? Is  
7       there a report which we can look to which sets out the  
8       lessons that you have learned?

9                   A. I don't think I have got a report  
10      called 'lessons learned'.

11                  Q. By whatever title, Mr. Wilson, I  
12      think you understand what I am interested in.

13                  A. No, it is not available in any  
14      succinct format.

15                  Q. Are there specific programs which  
16      have undergone this net impact analysis?

17                  A. None to my -- well, there may be some  
18      that have.

19                  Mr. MacLellan, I think you have some net  
20      impact analysis of some of the early promotions?

21                  MR. MACLELLAN: A. Yes, but I don't  
22      think I have seen the final report on it, so ...

23                  Q. All right. So, no report of the  
24      results of a net impact analysis have been presented to  
25      you yet?

1 MR. WILSON: A. I presume that I would  
2 have to say yes to that. We have interim results on a  
3 program basis - we have got it on an annual basis - how  
4 did that program conform to date? But we haven't  
5 reached the sunset, I guess --

6 Q. So, your observation about the  
7 lessons you have learned are really based on these  
8 interim results?

9 A. Yes, they are.

10 Q. All right. Now, I understand you are  
11 developing your standard methods for this evaluation  
12 process and I have your undertaking on that. Do you  
13 have available any description of the evaluation  
14 methods you do apply?

15 A. It is a question of detail. Part of  
16 the explanation can be found in the exhibit that you  
17 filed, Exhibit 314, on page 13 --

18 Q. Yes.

19 A. -- on page 12. It describes the  
20 approach that we adopt for developing evaluation plans  
21 and then executing those evaluations.

22 Q. You will appreciate, Mr. Wilson, that  
23 for my advisors to be able to make any assessment about  
24 your evaluation program, they have to know something  
25 about, for example, the field analysis you propose to



1 do or what type of load analysis or metering analysis  
2 you do.

3 Are there protocols for those analyses?  
4 Are there procedures for that?

5 A. I think I have already given you the  
6 answer to that question.

7 Q. Perhaps I have missed it.

8 A. We are developing a procedure which  
9 will -- There are some key questions to be answered  
10 through evaluation. There are no standard protocols  
11 because there is, practically speaking, no standard  
12 best approach for evaluating programs, at least that we  
13 have discovered.

14 Q. Well, when you did your net impact  
15 analysis for 1990, did you look at the infield  
16 consumption of participants?

17 A. In some cases, yes.

18 Q. All right. And you must have some  
19 guidelines, some protocol, which sets out how you do  
20 that; for example, that tells you whether you meter the  
21 installation both before and after, the site before and  
22 after installation, what sample of participants you  
23 meter, what statistical tools you use to apply that  
24 sample to your actual participant population.

25 Do you have those guidelines?

1 MS. FRASER: A. This is something that  
2 is very program-by-program specific and it goes back to  
3 what I said before in terms of the amount of analysis  
4 and technical studies that we do prior to a program and  
5 that helps us to determine how much we think is  
6 necessary to do after the fact.

7 You can spend upwards of \$400,000  
8 monitoring one site and we are not about to do that for  
9 a 20 kilowatt saving.

10 Q. Believe me, Ms. Fraser, I am not  
11 suggesting that you go out and meter to test your low  
12 flow showerheads. We all know that is --

13 A. We did that in the first instance  
14 before we started the program and we determined at that  
15 point that each showerhead was worth, on a 16-hour  
16 diversified basis, 51 watts.

17 Q. I will accept --

18 A. And so every time we put a showerhead  
19 in, we say, well, there goes another 51 watts.

20 Q. I will accept, Ms. Fraser, and I  
21 don't think there is any issue between us, that you  
22 don't necessarily meter every type of program. There  
23 are some you should and there are some where you don't,  
24 right?

25 A. There are some that the metering may

1 be actually part of the calculation of the incentive.

2 In our accelerated payback program, we may do spot  
3 metering with our portable recording Ammeters.

4 In the guaranteed energy performance  
5 program, we only pay on the basis of actual  
6 performance.

7 So, those sorts of things we wouldn't go  
8 out and measure separately when the customer's meter  
9 already measures it.

10 Q. Turn up page 14 of this package,  
11 Exhibit 314. And the question was:

12 "Please provide descriptions of  
13 program monitoring and evaluation plans."

14 What I am struggling for, Ms. Fraser, is  
15 some description of the actual measures you take. I  
16 appreciate you don't have a branch-wide protocol for  
17 how you measure a program, but I assume when you do,  
18 for example, metering, for the purpose of metering a  
19 sample of the population and doing a statistical  
20 analysis over the whole installed population, that  
21 there must be something that we can look at, that my  
22 advisors can look at, to say whether you are doing it  
23 correctly or not.

24 Is there something that you can give us  
25 on those types of procedures? If the answer is no, I

1 guess I will live with it, but ...

2 A. I guess I am just not exactly sure  
3 what you are asking me.

4 If our metering group - and we have a  
5 special field projects group that does metering, goes  
6 in and puts meters all over places - it is not one of  
7 the things that I get terribly involved in, so ...

8 Q. The meter maids?

9 A. Well, no, no, but anyway ... And how  
10 they go about doing that. Now, how we choose what kind  
11 of sites to be doing that is another issue and again,  
12 it is very program specific.

13 [3:03 p.m.].

14 I believe we have developed an evaluation  
15 plan for the lighting program. It's in a draft stage,  
16 it's still not approved yet. I think we have one for  
17 the showerhead program in commercial. I am not  
18 familiar with where we stand on the residential  
19 evaluations.

20 Q. I assume, Ms. Fraser, that the  
21 verifications you have done have been documented in  
22 terms of the procedures followed?

23 A. Well, we have got tons of reports in  
24 terms of load management field trials, and we did  
25 those. A lot of them are more in the pre-program than

1 they are in post-program.

2 Q. We are talking about net impact  
3 evaluation.

4 A. The problem is we don't have a lot of  
5 programs that have ended.

6 Q. How do you use the net impact  
7 evaluation result to make mid course corrections unless  
8 you do it before the program has ended?

9 A. Well, I talked about this this  
10 morning. There is not one thing, and I think maybe  
11 this is where we are having difficulty in talking about  
12 it. There is not one thing that is the evaluation.  
13 Evaluation takes place all the way through, from the  
14 concept screening, right down to when the program is  
15 all wrapped up and finished.

16 We do research at certain points in time  
17 within our lighting program, in the two years it's been  
18 running, less than two years it's been running. We  
19 have done three different market research studies to  
20 determine how the application process was working, how  
21 those sorts of things were working. We fine-tuned the  
22 program along those lines.

23 We did tests in advance of that program  
24 in terms of what happens when you change building the  
25 lights in building "X" to something else in order to



1       verify the kinds of savings that we thought we were  
2       going to get. Those sorts of things, and we have been  
3       doing that on an ongoing basis.

4               We haven't sort of said, okay, let's stop  
5       everything that we are doing so that we can do all of  
6       this. We have continued on through, we are in the  
7       process of putting a whole plan together to look at the  
8       total evaluation function, and Mr. Wilson talked about  
9       that being ready in the next couple of months.

10              Q. I don't want to be on this all day,  
11       but I wanted to try and see if I can understand. At  
12       the end of 1990 you actually produced a net impact  
13       analysis?

14              A. Correct. We netted out free riders,  
15       we determined -- Now are you saying did we actually go  
16       back and...

17              THE CHAIRMAN: Perhaps you could just  
18       take one question at a time. In 1990 you did a net  
19       impact program. Now Mr. Mark will have another  
20       question following that.

21              MR. MARK: Q. Correct? You did that?

22              MS. FRASER: A. Yes. Now, I think this  
23       gets back to the semantics of what do you mean by that  
24       and what do we mean by that.

25              Q. You had your gross megawatt tracking

1 result?

2 A. Correct.

3 Q. And then that went through some sort  
4 of impact evaluation?

5 A. We first went through a verification  
6 process to make sure all of the things happened that --

7 Q. That's the audit process.

8 A. That's right.

9 Q. You make sure that your field staff  
10 isn't misrepresenting things and that the boxes have  
11 been filled in correctly and that the math on the  
12 sheets --

13 A. It's a little bit more than that.  
14 There are situations where the customer is expected to  
15 take two chillers off line and we actually went back  
16 and asked the customer, well, it turned out I couldn't  
17 do the cooling I wanted to, I had to put one chiller  
18 back. We are changing the numbers as well as verifying  
19 the paper flow.

20 Q. It's the audit function.

21 A. Correct. Verification function.

22 Q. And either on a gross basis or a  
23 program-by-program basis, somebody went through the  
24 exercise of moving from gross megawatts to net impact.

25 A. Correct.

1 Q. And to do that they must have had  
2 regard to various tests and methodolgies which one uses  
3 in net impact evaluation, a field test, a billing data  
4 analysis, and actual meterings. Something had to be  
5 done; correct?

6 A. Well, I think this is where we are  
7 not discussing the same thing.

8 Q. Where are we different?

9 A. I want to be helpful here.

10 The process that you have just described  
11 has taken place and there is analysis done. It's an  
12 analytical process at that point. It is not wiring up  
13 meters and all the rest of it.

14 What we are talking about here is a  
15 process of flow, I guess, we could say, through the  
16 management process.

17 When you then step back and do an impact  
18 evaluation, you are taking a picture from a bit of a  
19 distance, and there is a number of questions that you  
20 are going to ask in that impact evaluation, and one is:  
21 Are the assumptions that you made about how many watts  
22 will this light save, actually materializing in the  
23 actual installations in reality? That is a separate  
24 process that I would describe as impact evaluation.

25 Q. Yes. And is that being done?

1                   A. Those are the things that are in a  
2 planning mode at this point.

3                   Q. So we don't yet have being done those  
4 things that you just said, types of things you just  
5 said comprise your net impact evaluation?

6                   A. No. What we have described as a net  
7 impact is, once you have gone through the process, you  
8 have the gross kilowatts from the monitoring tracking  
9 system; you verified that those gross kilowatts exist.  
10 We then do a net impact to determine the net impact, we  
11 net out free riders, we factor in the line losses, we  
12 determine how permanent things are, we look at who  
13 would have done it not only that year but who would  
14 have done it two years hence, ten years hence, and so  
15 on. That is a different process than what you are  
16 talking about or what I understand impact evaluation to  
17 be.

18                  Q. All right. I think I am beginning to  
19 understand, Ms. Fraser. What you haven't yet started  
20 doing is actually moving away from or analyzing the  
21 accuracy of your engineering estimates?

22                  A. No, and the reason -- that's  
23 something very important and we intend to do that. But  
24 in many cases our programs are not based solely on  
25 engineering estimates. They are not solely based on an

1 engineer sitting in a room with a slide-rule figuring  
2 out, well, this is 70 watts, this is 15 watts,  
3 therefore it's 55 watt difference. Did I get the math  
4 right?

5 We have a lot of installations in  
6 advance of programs where we have done actual  
7 evaluations or tests. We have done a lot of tests in  
8 residential with respect to particular programs or  
9 technologies. We have metered R2000 houses until the  
10 cows come home. That's the agricultural program.

11 In terms of the occupancy sensor program  
12 we did a meter test first of all. When we got into the  
13 program we had slow uptake, so what we did was we went  
14 to an actual customer, worked out the process with the  
15 customer, had control rooms and installation rooms.  
16 Hydro developed its own electronic recorder Ammeter to  
17 do this sort of thing.

18 Q. Let me ask you this, Ms. Fraser: A  
19 few moments ago you said there was something that is  
20 not yet being done.

21 A. Yes.

22 Q. Please tell me what it is that isn't  
23 being done yet?

24 A. Well, as Mr. Wilson indicated, the  
25 development of a comprehensive plan to do impact



1 evaluations on a planned and programmed basis, program  
2 by program, that plan is currently underway.

3 We have started work on individual  
4 evaluation plans on a program-by-program basis. We  
5 have set some priorities, the lighting program was  
6 obviously one, and that plan I believe is now drafted.  
7 I am not sure exactly where it stands in the approval  
8 process, given I have been out of it for four months,  
9 but those are the sorts of things. That will include  
10 market research, it will include everything up to but  
11 not including giving the customer sodium penathol to  
12 see if they would have done it any if we hadn't given  
13 them an incentive.

14 Q. Maybe at this point we will wait  
15 until we get the answer to that undertaking that has  
16 your program.

17 In essence, there is nothing you can  
18 provide to us today which can give a description of the  
19 types of procedures you apply to your gross megawatt  
20 results to get to your net megawatt result, that sets  
21 out any protocols for those procedures?

22 MR. BURKE: A I think there are two  
23 layers to this, and I think that's been running through  
24 your cross-examination. One is how we actually do it  
25 now and then there is how we might like to do it in the

1 future. How we do it now I think we have described, we  
2 take-off line losses, that sort of thing, we account  
3 for free riders and worry about sustainability, and we  
4 already had an estimate of net megawatts as opposed to  
5 gross megawatts per installation before we even started  
6 the program. So, that's how we get the numbers today.

7 Q. Can I just stop you there, Mr. Burke.  
8 I will let you go on but correct me if I am wrong, it's  
9 my understanding the way this works, that to that point  
10 though, you are by and large still using your  
11 engineering estimates, and you haven't done what is  
12 called in the industry in-field verification?

13 A. I think the distinction is that - and  
14 Ms. Fraser and Mr. Wilson both have been trying to make  
15 it - that yes, right now we are not, as the program  
16 goes, doing a lot of in-field verification, but prior  
17 to the program, in designing the program, there was  
18 in-field metering assessment and a so on, and it's on  
19 the basis of those results in real world applications  
20 that inferences are being drawn about how the gross  
21 megawatts translate into megawatts.

22 Q. Isn't the heart of net impact  
23 evaluation, though, Mr. Burke, to do your in-field  
24 verifications after your program is underway, so you  
25 can test the projections that you derive from whatever

1 field tests you may have done before you undertook the  
2 program; is that correct?

3 A. That's correct.

4 Q. If I understand you correctly, that  
5 is what is not yet being done?

6 A. That is what is not yet being done.  
7 There may be instances where it is, but in general it  
8 is not being done. That is something we intend to do,  
9 we think it is important to do, and it is also very  
10 early days in the program itself. We haven't had that  
11 much actual experience.

12 My understanding from the energy  
13 management people is that it has been their priority to  
14 get the programs in the field first, and they promise  
15 to have the evaluation process catch up. Certainly, as  
16 the number of megawatts start to mount, it will become  
17 increasingly important to do so. I, as the producer of  
18 a primary load forecast, certainly have a vested  
19 interest in getting good information of that sort, and  
20 I will be doing my little bit to encourage that sort of  
21 evaluation process coming about.

22 Q. I thank you, Mr. Burke, because I  
23 think that really does clarify it for me. Let's just  
24 move ahead a little bit.

25 Mr. Wilson, would you agree with me that

1 results from other jurisdictions, let's keep in North  
2 America, are generally showing that there tend to be in  
3 many instances significant differences between the  
4 engineering estimates which were derived during the  
5 program planning stage, and the results which are being  
6 shown by the net impact studies which are being  
7 conducted.

8 MR. WILSON: A. Yes, I believe that's  
9 the case.

10 MS. FRASER: A. This is where I point  
11 out where I think we also see a difference between the  
12 approach we have taken in developing designing programs  
13 and some of the programs I have seen in the U.S. That  
14 we haven't just based our programs on engineering  
15 estimates, they are not just based on, as I said, an  
16 engineer in a room with a slide-rule.

17 THE CHAIRMAN: Mr. Mark, were you  
18 suggesting in your question the difference between  
19 engineering estimates and the impact studies were going  
20 in any particular direction?

21 MR. MARK: Yes.

22 Q. And perhaps, if it's not clear, Mr.  
23 Wilson, would you agree with me that when you said the  
24 differences were showing up, that to a large extent  
25 those differences show that the net impact results are

1 less favourable than were projected by the engineering  
2 estimates?

3 MR. WILSON: A. I believe that's been  
4 the experience in the United States.

5 MS. FRASER: A. It's gone both ways.

6 Q. Generally it's unfavourable; correct?

7 A. In terms of the sample provided in  
8 the study that you have in your exhibit at page 17.

9 Q. Yes.

10 A. Yes. I haven't seen a comprehensive  
11 study across all programs in the U.S.

12 Q. That is what this document, page 17,  
13 this study -- You have had a chance to review it?

14 A. Correct.

15 Q. And you are not aware of any studies  
16 or presentations which show anything different?

17 [3:19 p.m.].

18 A. No, I am not aware of a comprehensive  
19 one, but I would just point out some of the  
20 differences. It gets into the lighting which is the  
21 largest piece of the action. And this one deals  
22 specifically with the biggest impact, as I understand  
23 it, in that difference and in that shortfall that you  
24 see between engineering estimates and the monitored  
25 results has to do with operating hours in terms of



1 generating the numbers for energy savings.

2 You will note that our monitoring system  
3 doesn't deal with kilowatthours; it deals with  
4 kilowatts.

5 So from a lighting point of view, which  
6 is the largest piece of the action I think in terms of  
7 numbers here is, I think, 60 to 80 per cent of the  
8 savings in commercial and industrial are in lighting in  
9 the U.S.

10 Q. Would you agree with me, Ms. Fraser,  
11 that certainly this report indicates that actual net  
12 impact evaluations on a program-by-program  
13 utility-by-utility basis are absolutely imperative?

14 A. Excuse me, can you say that again?

15 Q. What this indicates is that  
16 essentially you are proceeding at your peril if you  
17 don't have plans for net impact evaluations for all  
18 your programs?

19 A. Absolutely.

20 MR. MACLELLAN: A. The thing that it  
21 showed us a little bit more than that was before you  
22 proceed with a program, don't just base it on  
23 engineering estimates.

24 In reading through all these programs,  
25 what struck me was what I will consider unreasonable

1 assumptions by the utilities involved. For example,  
2 with water heater wrap programs, they assume that all  
3 five water heater measures would be installed in 100  
4 per cent of homes. It is just plain unreasonable.

5 Q. Well, what you see from this, I  
6 guess, Mr. MacLellan, is that a whole bunch of  
7 utilities involved in demand management in a serious  
8 way tend to make some wrong assumptions in their  
9 engineering estimates, right?

10 A. Correct. That is why we try not to  
11 rely on engineering estimates in the absence of pilot  
12 program data, field test data, that kind of  
13 information.

14 Q. That is right. The utilities they  
15 looked at are experienced utilities, are they not?

16 A. Yes.

17 Q. They are serious participants in DSM,  
18 are they not?

19 A. Yes, they are now. I am not sure  
20 they were when they developed the programs discussed  
21 here.

22 Q. All right. You don't mean to suggest  
23 to me though, Mr. MacLellan, that you are satisfied  
24 that Hydro is not going to be subject to the same  
25 erroneous assumptions that seem to prevail in many of

1 these programs? I am not saying that there is any  
2 fault to be found there.

3 A. No. I am sure we will make mistakes,  
4 no question about that. We find reports like this  
5 quite good because we like learning from other people's  
6 mistakes as opposed to ours.

7 Q. I am glad we can be helpful.  
8 (laughter)

9 Just a couple of final things on this  
10 subject, Panel.

11 Ms. Fraser, have you yet done your audit  
12 or your verification of your megawatt tracking system?

13 MS. FRASER: A. For which year? We have  
14 done two years; '89 and '90 are complete.

15 Q. Yes. And you understand what I mean  
16 when I say an audit? You actually send in auditors, as  
17 I understand it, do you not?

18 A. I believe it is Price-Waterhouse that  
19 does it.

20 Q. That's right. And what were the  
21 results of those audits?

22 A. I haven't seen that--

23 Q. You haven't?

24 A. --study for 1990. I have been doing  
25 this.

1 Q. All right. Has anybody seen it? I  
2 would be interested to know because it is my advice  
3 that in the U.S. at least, there tend to be some  
4 significant errors and discrepancies found and I would  
5 like to know what Hydro's experience has been with the  
6 accuracy of the reports.

7 THE CHAIRMAN: You are talking about 1989  
8 and 1990?

9 MR. MARK: Either, both. We can perhaps  
10 get more refined.

11 MR. MacLELLAN: The three programs that I  
12 was involved in 1990 that were audited by that  
13 organization, the numbers were confirmed; participant  
14 levels and the watt credit per unit were both  
15 confirmed.

16 Q. Is there some comprehensive report?  
17 Did Price-Waterhouse issue you a report?

18 MR. WILSON: A. Yes, there is. And the  
19 key results that I think you are looking for, based  
20 upon the sample that they drew and the criteria they  
21 used for their assessment, was that in 1990 the  
22 megawatt tracking system results were overstated and  
23 they were overstated by approximately -- I am quoting  
24 here:

25 "These results are overstated by  
Farr & Associates Reporting, Inc.

1 approximately 8 per cent, 16 per cent and  
2 3 per cent respectively."

3 THE CHAIRMAN: 8 per cent, 16 and 23?

4 MR. WILSON: For the industrial,  
5 commercial and residential sectors.

6 THE CHAIRMAN: All right.

7 MR. MARK: Q. I am wondering if you  
8 could provide us with a copy that report?

9 MR. WILSON: A. Yes, we can.

10 Q. Is that for 1990?

11 A. For 1990.

12 Q. Please.

13 THE CHAIRMAN: Just for my information,  
14 could you give me those figures again, please, for  
15 industrial, residential and commercial?

16 MR. WILSON: 8 per cent industrial.

17 THE CHAIRMAN: Yes?

18 MR. WILSON: 16 per cent commercial and 3  
19 per cent residential.

20 THE CHAIRMAN: So that Mr. MacLellan is  
21 probably right, with the 3 per cent, it is pretty close  
22 to right on.

23 MR. WILSON: Yes.

24 THE CHAIRMAN: But the ...

25 MR. WILSON: And actually, Ernst & Young



1 is the consultant and they state that their sample size  
2 is drawn to give a precision of plus or minus 5  
3 megawatts with a 95 per cent confidence level.

4 THE CHAIRMAN: Plus or minus 5 megawatts?

5 MR. WILSON: Yes.

6 THE CHAIRMAN: Are the figures out? Is  
7 there any place we can find all these, the megawatts  
8 and percentages, what you are reading from now?

9 MR. WILSON: We will provide the Board  
10 with a copy of this.

11 MR. MARK: I thought I had just gotten  
12 that undertaking. I was going to ask a number for it.

13 THE CHAIRMAN: 261?

14 THE REGISTRAR: 267.19, Mr. Chairman.

15 THE CHAIRMAN:

16 MR. MARK: Thank you, Mr. Chairman.

17 ---UNDERTAKING NO. 267.19: Ontario Hydro undertakes to  
18 provide the 1990 net impact analyses for  
demand management results.

19 MR. WILSON: I will just add that in our  
20 assessment, we were describing ad nauseum, I am afraid,  
21 of net impact analysis the results of this report were  
22 taken into account. It is part of our assessment.

23 MR. MARK: Q. The primary reporting  
24 function for these, Ms. Fraser, rests with your CES  
25 field staff; is that fair?

1 MS. FRASER: A. In terms of the megawatt  
2 tracking system?

3 Q. Yes.

4 A. It is between the field staff, the  
5 financial incentive data base, it is a combination.

6 Q. But the starting point and really the  
7 bedrock of all this data gathering is what your CES  
8 field people tell you?

9 A. Actually, it is what they fill out in  
10 application form for incentives and what is then  
11 verified and we pay on will be the bedrock as we expand  
12 our financial incentive program.

13 The information-driven things that we do  
14 not provide incentive cheques for come through -- those  
15 are primarily from the field reports.

16 But basically, in the event that there is  
17 a discrepancy between the financial incentives data  
18 base in terms of, you know, the megawatts we have  
19 actually paid for and what field staff reports  
20 indicate, that come the end of the year what we have  
21 paid for is what is the final number that we use.

22 Q. I understand, but whether it is an  
23 incentive program or not an incentive program, the  
24 first line of reporting is from your field staff,  
25 whether it is in the --

1                   A. If they want to report potential or  
2 commitments in advance of the actual savings, those  
3 things come through field reports; however, we don't  
4 chuck them up in terms of the numbers that I have  
5 talked about so far until they have actually been both  
6 installed and we have verified the installation of them  
7 and processed the cheque to be paid. So that becomes  
8 the trigger point.

9                   Q. But you have non-incentive programs  
10 as well which are included in this tracking system?

11                  A. Those are through the tracking  
12 system, yes.

13                  Q. And those come also from the field  
14 reps?

15                  A. Correct.

16                  Q. All right.

17                  MR. MACLELLAN: A. In the residential  
18 sector, that doesn't tend to be the case. We collect  
19 very little of our data directly from field staff  
20 largely because our programs tend to be delivered  
21 through other vehicles, retailers, contractor groups,  
22 builder associations. So, you can't make that general  
23 statement for residential because it is done on a  
24 broader basis through different allies.

25                  Q. And do you have any system whereby

1 you record savings achievements by field office or by  
2 an individual customer service officer?

3 MS. FRASER: A. Yes. That is part of  
4 the megawatt tracking system. The targets are set by  
5 field office as well.

6 Q. All right. Is there some sort of  
7 incentive program in place to motivate your area  
8 offices or your staff?

9 A. Not at this point, no.

10 Q. No.

11 A. There is a management process. And  
12 the commercial sector targets, for example - I  
13 explained this yesterday - is based on performance pay.  
14 And those results are in the performance contract.

15 Q. Do you record for any purpose  
16 megawatts saved by individual employee?

17 A. Yes. That is part of the megawatt  
18 tracking system and we also -- in terms of individual  
19 programs, for example, it is part of just the project  
20 management aspect.

21 Q. What is the purpose of - if I can say  
22 it this way - giving credit to individual employees for  
23 megawatts saved?

24 A. That is probably part of their  
25 performance review process, but they don't get a dollar

1 per megawatt or something like that.

2 MR. MacLELLAN: A. Again, residential is  
3 not quite the same in that regard. We tend to have  
4 results by office as opposed to by individual largely  
5 because we can't break down the data that finely by  
6 individual.

7 Q. Mr. Burke, let's move on to a new  
8 subject, if I could go back to you, please.

9 We have been speaking in the hearing  
10 largely about your projections for savings to the year  
11 2000. That seems to be the time horizon that is  
12 dominating your planning and thinking at the moment; is  
13 that fair?

14 MR. BURKE: A. Well, the analysis of  
15 efficiency improvement opportunities is focused on the  
16 year 2000.

17 Q. And as I understand it for the  
18 periods beyond 2000, you are generally applying an  
19 assumed penetration rate; that is, a penetration rate  
20 you assume you will have achieved by the year 2000;  
21 applying that to your load forecast estimates of load  
22 for these particular applications, which are subject to  
23 programs.

24 A. Well, there's two elements: There is  
25 the actual efficiency gain in each load segment and



1 then there is a penetration rate.

2 As far as the penetration rate is  
3 concerned, yes, we take, you would say, the marginal  
4 penetration rate achieved by the year 2000 and we  
5 continue that penetration rate beyond the year 2000 in  
6 the remaining potential for each segment.

7 Q. And it follows from that obviously  
8 that the assumption or projection you are making today  
9 about the penetration rate you achieve in the year 2000  
10 will have an impact on the gains you will get for each  
11 of those years beyond 2000 to the end of our planning  
12 horizon?

13 A. Yes. I think that the reason we  
14 probably are fairly happy with that is that we are on a  
15 pretty steep ramp through the 1990s. So that the  
16 marginal penetration rates, that is the proportion of  
17 the market that we are getting around the year 2000, is  
18 much higher than the average penetration rate that we  
19 are observing during the 1990s and that seems like a  
20 reasonable place to stop increasing the penetration  
21 rate.

22 Q. My point was simply: It is clear  
23 that the penetration rate you assume you will get to  
24 the year 2000 is what dominates your forecast for the  
25 following years?

1 A. Yes, that's right.

2 Q. All right.

3 Mr. Burke, I know you had some discussion  
4 a few days ago with Mr. Rodger on behalf of AMPCO about  
5 some of the risks associated with your demand  
6 management forecasts and the question of uncertainty.  
7 I want to deal with a couple of issues on that. I have  
8 looked at the transcript and I don't mean to be  
9 repetitive, Mr. Burke, but I just want to be sure that  
10 the record is clear.

11 Is it your position that the same  
12 uncertainty applies to both the basic load forecast and  
13 the primary load forecast?

14 A. Given the analysis and information to  
15 date, yes.

16 [3:35 p.m.].

17 Q. And I take it when you say that, we  
18 are now talking about your 90/12/10 forecast?

19 A. Yes.

20 Q. Am I correct, Mr. Burke, that in the  
21 load forecast which underlies the original DSP document  
22 you in fact had a different conclusion?

23 A. Well the load forecast underlying the  
24 DSP, the 1988 basic load forecast, there are  
25 uncertainty bands provided for the basic load forecast.

1 And the approach taken in the DSP was to then subtract  
2 the -- cases of demand management or plans for demand  
3 management that corresponded to high and low cases in  
4 order to produce a range of outcomes for the primary  
5 load forecast -- for the primary load, rather, and  
6 essentially determine the supply plan from that basis.

7 I think, from my perspective, in the 1988  
8 period for the DSP we did not produce a band with  
9 forecast for the primary load. We did not claim to.  
10 What we have is simply cases applied to the upper and  
11 lower bounds of the basic load forecast and those cases  
12 did not have the same effect as what we are now doing  
13 in 1990.

14 Q. Mr. Burke could you turn to page 27  
15 of Exhibit 314.

16 You will see, Mr. Burke, that is a table  
17 that we have had prepared which summarizes certain  
18 information contained in your Demand Supply Report.  
19 Have you had a chance to review that?

20 A. Well, I must admit that I have not  
21 checked every number but, subject to check, I will  
22 accept them.

23 Q. And if we look at the year 2014,  
24 looking at the uncertainty ranges in peak demand, do we  
25 not see that you have a smaller uncertainty range in

1 both percentage and absolute terms for your primary  
2 load than we do for your basic load?

3 A. Yes, that's correct.

4 Q. And do I understand then that you  
5 have changed your view of things between the time when  
6 that forecast was prepared and the 90/10/12 forecast  
7 was prepared?

8 A. Well, I think I tried to explain that  
9 essentially what you see here is not so much an attempt  
10 to determine the uncertainty range or the uncertainty  
11 band width in probabilistic sense for the primary load  
12 forecast, but the application of low and high demand  
13 management plans to the boundaries of the basic load  
14 forecast. So the methodology is different between 1988  
15 and 1990.

16 Now, how the system planners use the  
17 information in the primary load forecast range is  
18 really something you will have to ask them, but  
19 essentially what was done in 1988 was to postulate that  
20 in the upper case there was a likelihood of higher  
21 levels of demand management than in the median case  
22 which would have the effect of lowering the upper case  
23 value somewhat; and conversely, in the lower band, that  
24 you would have less of a potential for demand  
25 management in the lower case and so you would reduce

1 the lower bound by less. And effectively it had the  
2 pinching effect that you see on page 27 of your exhibit  
3 and made the primary band width narrower than the basic  
4 band width.

5 Subsequent analysis which we filed in  
6 Panel 1, various interrogatories about the uncertainty  
7 band for the primary load forecast suggested through  
8 simulation experiments only, we really do not have real  
9 data to work with, that we did not think that that was  
10 a reasonable result and so we have changed the  
11 approach.

12 Q. You will agree with me, of course,  
13 Mr. Burke, that you are much less able to estimate your  
14 uncertainty -- the uncertainty associated with your DSM  
15 forecast than you are with your load forecast.

16 A. I think that has been implicit in  
17 what I have said on this matter to this panel already.  
18 That because we do not have historical information, we  
19 have to find other approaches.

20 Q. So leaving aside basic versus primary  
21 for the moment, can we agree that your DSM forecast is  
22 more uncertain than your basic load forecast?

23 A. Yes, it is, and what I have suggested  
24 is that really the DSM forecast per se is of very  
25 little relevance to the demand supply planning process.



1       What is of relevance is the uncertainty band for the  
2       primary load forecast.

3               Q. I know, Mr. Burke, but you do not  
4       mean to suggest to me that the uncertainty associated  
5       with your demand management forecast is not something  
6       that is to be looked at very carefully when  
7       determining, if even on an intuitive basis, whether  
8       your primary load forecast should have a different  
9       uncertainty ascribed to it?

10              A. Certainly you can look at it, but its  
11       contribution to the primary load forecast -- how much  
12       the differences that emerge in your views about demand  
13       management uncertainty affect primary load forecast  
14       uncertainty is, perhaps, less than one might think.

15              Q. And the analysis you are talking  
16       about is where - correct me if I am wrong - you did  
17       some sample distributions?

18              A. We postulated different shapes of  
19       distributions and different types of distributions and  
20       different widths of distributions, different  
21       correlation effects.

22              Q. And we have no, as you have said,  
23       historical data to tell us which if any of those  
24       simulations are more likely to occur than others?

25              A. That is true, but because there are a

1 lot of offsetting effects, it wasn't as if the results  
2 were all over the map. They tended to converge toward  
3 having the primary band with roughly the same size as  
4 the basic band width.

5 There are a lot of offsetting factors  
6 here and that is why I do not think it is an  
7 unreasonable result that we have derived.

8 Q. when I was thinking about this, Mr.  
9 Burke, a simple example came to mind and let me put it  
10 to you.

11 You could quite easily, based upon  
12 historical data, do a load forecast, a use forecast for  
13 this building, could you not? You have got probably 10  
14 years of data and you could tell me with a fair degree  
15 of certainty how much electricity is going to be used  
16 in this building next year?

17 A. Okay. I do not do it by building but  
18 it could be done, I am sure.

19 Q. But the tools you use for your load  
20 forecast take several years of historical data and  
21 because you have lots of data you have a certain  
22 confidence level in your prediction for next year.

23 A. The trouble is, actually, the more  
24 micro you get the less specific data is available.

25 Q. You could do a forecast and you would

1 ascribe an uncertainty to that, correct?

2 A. Perhaps, if I had the information.

3 Q. Let us assume someone comes along and  
4 says to you, and you are the owner of the building,  
5 says, "I have a bundle of new technologies which I  
6 think can save you a fifth of your energy use in this  
7 building." And you say, "Fine, I am willing to do  
8 that." Which forecast do you have greater confidence  
9 in? The forecast for the use in the building without  
10 the energy saving measures or the forecast that you get  
11 after you apply his estimate of the energy savings?

12 A. Well, there are many things that can  
13 affect the ultimate outcome. He may be wrong about the  
14 use of electricity in the building 10 years from now  
15 and so it could be that the potential was higher than  
16 he thought. It could be, on the other hand, that he  
17 does not take advantage of all of the options  
18 available. So that even if the potential is higher  
19 than he thought he gets less result.

20 As far as I am concerned there are risks  
21 in both directions.

22 Q. Wouldn't you agree with me that on  
23 that case, Mr. Burke, it is rather obvious that your  
24 forecast, without taking into account his new bag of  
25 technologies, has got to be more certain than the

1 forecast you have when you try and adjust for that new  
2 bag of technologies?

3 A. No, because there are correlations  
4 between how much saving he gets and the errors that  
5 might occur in that underlying load forecast.

6 Q. And the empirical basis for that  
7 statement, do I find that in this analysis that you  
8 referred to; and I am sorry, I just do not have the  
9 number. I think it was an interrogatory response for  
10 AMPCO.

11 A. It could be. The sort of thing that  
12 is in there is the observation that under the sort of  
13 circumstances that lead to higher load growth in the  
14 business-as-usual basic case, are things that could be  
15 higher growth in GDP, with the building example that  
16 would effectively, I suppose, mean greater occupancy or  
17 something like that of this building and faster  
18 turnover of capital stock. So that when there is risks  
19 on the upside for the basic load forecast, the  
20 potential for demand management does rise.

21 On the other hand, there is also risk to  
22 the penetration rate and the penetration rate might  
23 fall under scenarios of high growth in the economy and  
24 people might not care about efficiency improvement. Or  
25 just the opposite may happen, people may find they have

1 so much cash that they are prepared to undertake all of  
2 these efficiency measures.

3 Q. You just do not know?

4 A. I am suggesting that there are risks  
5 both ways. It is not clear-cut that one is less than  
6 the other.

7 Q. Then I am wondering, Mr. Burke, what  
8 is the empirical basis for the statement that you keep  
9 coming back to that comparable uncertainty is --  
10 [3:45 p.m.].

11 A. It's actually the same absolute  
12 uncertainty and it's a higher percentage uncertainty  
13 that is suggested in the report.

14 We are applying the basic load forecast  
15 band width to a primary load forecast which in absolute  
16 terms by the year 2000 is 5000 megawatts less.

17 So, the percentage uncertainty is higher,  
18 the absolute uncertainty is maintained, and that is  
19 what the...

20 Q. You are talking about the 90/12/10  
21 forecast now?

22 A. Well, in the 90/12/10 forecast we  
23 give the basic uncertainty band. We suggest to people  
24 if they are interested in what the primary uncertainty  
25 band is, they can get in touch with us. But the way we



1 do derive it for planning purposes is to subtract a  
2 constant amount from each point of the basic load  
3 forecast band width. And that is consistent with the  
4 results of that simulation experiment.

5 THE CHAIRMAN: I realize you are not  
6 finished quite this particular area, but we are sort of  
7 at a watershed in it, so can we take the afternoon  
8 break?

9 MR. MARK: Sure.

10 THE REGISTRAR: This hearing will recess  
11 for fifteen minutes.

12 ---Recess at 3:46 p.m.

13 ---On resuming at 4:05 p.m.

14 THE REGISTRAR: Please come to order.  
15 This hearing is again in session. Please be seated.

16 THE CHAIRMAN: Mr. Mark?

17 MR. MARK: Thank you, Mr. Chairman.

18 Q. Mr. Burke, your analysis of the  
19 relationship between the uncertainty associated with  
20 the basic forecast and with the primary forecast, is  
21 that the analysis that we find at Interrogatory  
22 4.24.54?

23 MR. BURKE: A. Is there an attached  
24 report?

25 Q. Yes. It's called "Uncertainty Bands

1 for Primary Energy and Peak Forecasts" under  
2 Alternative Assumptions prepared by Mr...

3 A. Yes, that's the one.

4 Q. And there is no other study or  
5 analysis that you have done other than this?

6 A. No. The point, I hope it was clear  
7 before, was that for the purpose of the DSP, the factor  
8 considered in preparing cases for upper and lower  
9 demand management was the uncertainty in the potential.  
10 That the potential could be higher in the upper case  
11 and lower in the lower case. And the added wrinkle  
12 that's included in the analysis in that study is the  
13 consideration of the uncertainty in the penetration  
14 rates for the programs. Then looking at distributions,  
15 alternative candidate distributions for penetration  
16 rates, that had the effect of offsetting this narrowing  
17 effect that you have illustrated existed in the 1988  
18 gap between the lower and the upper primary band.

19 Q. I just want to confirm, Mr. Burke,  
20 that this is the study I would look to to find the  
21 rationale and the analysis supporting your conclusion?

22 A. That's correct, yes.

23 THE CHAIRMAN: Can you give me that  
24 number again, please.

25 MR. MARK: Yes. It's 4.24.54, Mr.

1 Chairman. It should perhaps be added to the list of  
2 interrogatories. It is not in my bundle of exhibits.

3 THE CHAIRMAN: 261.?

4 THE REGISTRAR: 63, Mr. Chairman.

5 THE CHAIRMAN: Thank you.

6 ---EXHIBIT NO. 261.63: Interrogatory No. 4.24.54.

7 MR. MARK: Q. Mr. Burke, can you at  
8 least judgmentally give me your uncertainty bounds for  
9 your DSM forecast, what you think is a reasonable or  
10 possible high case and low case?

11 MR. BURKE: A. No, I don't think I could  
12 do that. I haven't tried to do it so far, and it  
13 wouldn't be something that I could do at the top of my  
14 head.

15 Q. Have you made no estimate of what is  
16 the reasonable range or possible outcomes of your DSM  
17 program?

18 A. There are two elements again to this  
19 analysis. It would be the range in the potential and  
20 the range in the penetration rates, and I would take  
21 the product of the two, and the product of the two  
22 distributions are not the same as adding distributions,  
23 so it's something that you would have to simulate  
24 really.

25 Essentially, no, I have not done this and

1 I couldn't do it right here. So, I guess the answer is  
2 I don't have the answer to it.

3 Q. Even for some planning purposes, has  
4 nobody tried to identify some reasonable range of  
5 possible results surrounding your point forecast?

6 A. Well, I don't know if it would make  
7 that much difference, but are you asking, when you say  
8 "reasonable range", something that has a confidence,  
9 statistical confidence value associated with it?

10 Q. If it can be expressed that way. I  
11 asked the way I did because I understood that you  
12 probably haven't and may not be able to do the type of  
13 analysis that would have let you say what the range is  
14 with any particular degree of confidence.

15 My question is, perhaps even drawing upon  
16 your judgment as a forecaster, I would have thought - I  
17 may be wrong - but I would have thought that for some  
18 planning purposes or somewhere, somebody would have  
19 said, "Here is what we think is a realistic or possible  
20 high bound and here is what we think is our low bound  
21 and this is the range of possible outcomes."

22 A. I think the difficulty with doing  
23 that for demand management is that it's not some sort  
24 of historical trend value determined in marketplaces.  
25 It's something that has a large element of policy

1 control to it; that is, you can choose to obtain  
2 certain things or government policy can change to  
3 facilitate obtaining certain results. So, that if you  
4 ask the question, what could Hydro do by itself under a  
5 certain sort of budget, I might be able to think  
6 through that and say, well, it probably would result in  
7 a certain range, but I don't think that's the end of  
8 the story.

9 If the results turn out to be too low,  
10 the resource picture would change, the policy picture  
11 would change. Things would not be allowed necessarily  
12 to evolve under some original set of circumstances.  
13 And that's, I think, what makes it very difficult to  
14 postulate a range for this.

15 We know an estimate of potential, we have  
16 given that in Exhibit 258, including fuel switching, we  
17 have toward 9,000 megawatts of potential. There  
18 clearly are forces at work which mean we would not get  
19 anywhere near all of the potential, although others  
20 will perhaps argue that there is uncertainty about that  
21 potential; it could be higher, it could be lower.

22 It's really not something that lends  
23 itself very well to range forecasting independently.  
24 There are too many things that can change between now  
25 and then.



1 Q. Just related, and for point of  
2 clarification, do you simulate your uncertainty for  
3 your load displacement in NUG forecast that also goes  
4 into the mix, going from basic to primary?

5 A. We have taken the same approach to  
6 the other elements that occupy the difference between  
7 the basic and the primary and the median, we apply the  
8 same approach to determining -- equivalent values are  
9 subtracted right through the distribution for the basic  
10 to obtain the primary distribution.

11 Q. Would you agree with me, Mr. Burke,  
12 that the risks associated with your DSM forecast tend  
13 to be downside risks. It's more likely we will see  
14 lower results than higher results?

15 A. No.

16 Q. You are not prepared to agree with  
17 that?

18 A. No. I think that you might find -- I  
19 think the risks on potential are probably not  
20 symmetrical and neither are the risks on penetration  
21 rates, and how they combine together is also very  
22 difficult to assess. But I don't see a clear risk  
23 either way. The intent is to produce a median forecast  
24 and that's what we feel we have done.

25 Q. How can you say it's a median

1 forecast? You haven't been able, because you don't  
2 have the data, to looking at your uncertainty range;  
3 what leads you to say that it's even a median forecast?

4 A. Well, because there are policy  
5 instruments available to increase the ultimate result.

6 I am trying ultimately to forecast the  
7 primary load forecast. I think that's what counts for  
8 the supply planning purposes. The risks to the results  
9 of demand management are, to a certain extent,  
10 controllable. For instance, standards diminish the  
11 risks considerably in the achievement of demand  
12 management results.

13 Q. That's right.

14 A. The extent to which we move towards  
15 standards will reduce uncertainty in the primary load  
16 forecast. And some would argue there are statistical  
17 studies that have been done for Bonneville Power which  
18 would argue they also -- the imposition of standards  
19 reduce the risk in basic load forecast because there is  
20 less uncertainty about the level of efficiency  
21 generally in a particular end-use in the economy.

22 To the extent that standards are adopted,  
23 they will act to reduce uncertainty. To the extent  
24 that new options and opportunities are created, such as  
25 the introduction of fuel switching, we should be able

1 to increase our results and therefore have greater  
2 confidence in the primary load forecasts.

3 Q. As I understand it, Mr. Burke, when  
4 the target you were working with for sometime, which  
5 was the 3,000 megawatt target --

6 A. You mean the 2,000 for EEI and the  
7 1,000 for load shifting?

8 Q. Yes.

9 A. Yes.

10 Q. As I understand it, when that target  
11 was originally set, it was a target to be achieved  
12 sometime after the year 2000.

13 Mr. Wilson, perhaps you can...

14 MR. WILSON: A. I believe that was the  
15 target for the year 2000.

16 Q. It's been my understanding, Mr.  
17 Wilson, correct me if I am wrong, that over the last  
18 few years what has happened is your target has been  
19 advanced repeatedly.

20 A. The first target that was proposed -  
21 I think Mr. Shalaby could correct me - I think it was  
22 1987, or maybe sometime in 1988, was 1,000 megawatts  
23 for electrical efficiency improvements and 1,000  
24 megawatts for load shifting.

25 By the time the Demand/Supply Plan had

1 gone from draft form to final form, that number had  
2 been increased. The electrical efficiency improvement  
3 element had been increased from 1,000 to 2,000, and  
4 that was by the fall of 1989.

5 At no time do I recall a target of 2,000  
6 megawatts sometime beyond.

7 Q. In Exhibit 314, Mr. Wilson, could you  
8 turn, please to page 42. Do you recognize this, Mr.  
9 Wilson, as being an excerpt from your energy management  
10 function business plan for the years 1991 to 1995?

11 A. Yes, I do.

12 Q. And I am looking particularly under  
13 Item No. 1.3 and the second paragraph. The first  
14 paragraph starts out by identifying a day four years  
15 ago which would make it 1987.

16 [4:18 p.m.].

17 And then the second paragraph says:

18 Each year since then, the target date  
19 for significant demand management results  
20 has moved forward by two years.

21 And I had understood that to suggest that  
22 in each of these years, a target has been advanced  
23 presumably from some time out around 2008 to what we  
24 now have as 2000 for the achievement of your targets.

25 A. Well, I see how you could reach that

1 conclusion, but what was intended by this was an  
2 assessment of what is termed 'the system need date'.  
3 It is a time when there is a cross-over between a  
4 projection of the system's load meeting capability and  
5 the median forecast for basic load.

6 And as we moved still in the late '80s,  
7 load forecasts were still rising and it was appearing  
8 that we would have to meet -- have demand management  
9 make a significant contribution to load meeting in the  
10 late 90s when we had imagined early in the mid-80s that  
11 that requirement would not be an issue until the year  
12 2000 or perhaps beyond.

13 Q. Is that pressure relaxing at all  
14 given the more recent load growth patterns?

15 MR. BURKE: A. There have been very  
16 small revisions to the year 2000 forecast based on the  
17 current conditions.

18 Q. In any event, Mr. Wilson, you will  
19 agree with me that those changing events has in the  
20 past few years lead your branch to have to adopt a  
21 strategy of fast-tracking program development and  
22 delivery?

23 MR. WILSON: A. Yes.

24 Q. And that fast-tracking, I assume,  
25 carries with it some risks and some costs?



1 A. Yes.

2 Q. And as you have had to advance the  
3 date upon which you have to achieve your objectives,  
4 the risks of whether you will be able to achieve that,  
5 of course, increase?

6 A. I think what has happened is that the  
7 results we intended to achieve, say, by 1995 has  
8 increased each year over the last few years.

9 The nature of the risks, I think, is the  
10 extent to which we are prepared to make mistakes with  
11 programs in the field as opposed to conduct extensive  
12 field testing and assure ourselves beyond a reasonable  
13 doubt about market response and the cost of execution  
14 of programs before we put programs in the field.

15 Certainly, my colleagues here's  
16 experience of the last few years is that we went from a  
17 regime where we intended to test everything beyond a  
18 shadow of a doubt to putting in programs in the field  
19 and then finding out what actually worked.

20 Now, it would be my reading that they  
21 probably prefer the current approach.

22 Q. But as that approach has been adopted  
23 and you get this acceleration of your program, the  
24 risks include long-term uncertainties of predicted  
25 megawatt results, do they not?

1                   A. I think we certainly didn't quantify  
2 this uncertainty.

3                   Q. But isn't that clearly a risk that  
4 results from the acceleration?

5                   A. I concede that there's some risk of  
6 accomplishment when you are less prepared to proceed.

7                   I think the primary nature of the risks  
8 that are being referred to here are the risks of  
9 starting out on some endeavor and then wishing that you  
10 hadn't or finding it was really not performing well.

11                   These are planners', I have to say,  
12 planners' qualms, not marketers' qualms.

13                   Q. I suggest, Mr. Wilson, that with this  
14 acceleration, you get the risk of long-term  
15 uncertainties of predicted megawatt results; isn't that  
16 fair?

17                   A. I am sorry, are you quoting from the  
18 record?

19                   Q. I would like to know if you agree  
20 with that.

21                   Your colleagues have found it for you,  
22 Mr. Wilson, so let's go right to it.

23                   A. And in my copy, because it was  
24 highlighted, it is almost completely illegible.

25                   Q. Well, your answer, I assume, doesn't

1 depend on whether or not it is written there.

2 I mean, what is the answer?

3 A. No, it doesn't. We felt that there  
4 were risks of not meeting targets.

5 Q. And I want to be clear. You get that  
6 risk as a result of this acceleration?

7 A. Yes.

8 Q. And you also get the possibility of  
9 significant increases in the numbers of free riders?

10 A. That is correct.

11 Q. And more recently, Mr. Wilson, in  
12 addition to the acceleration of this critical --

13 THE CHAIRMAN: Excuse me, why does it  
14 follow you get an increase in the number of free  
15 riders?

16 MR. WILSON: Well, my colleagues here  
17 have testified that if you design programs well, you  
18 have a good understanding of who the decision-makers  
19 are and what they are prepared to do on their own; then  
20 you target your programs to the ones who need a push  
21 and need an incentive to act.

22 THE CHAIRMAN: We are talking about just  
23 compressing the time frame in which you have got to  
24 reach a certain amount of --

25 MR. WILSON: If you haven't enough time

1 to gain that understanding, there is a chance that you  
2 will be less discriminating in your program design.

3 THE CHAIRMAN: All right. Okay.

4 MR. MARK: Q. And one of the other  
5 consequences of this fast-tracking approach you have  
6 taken is that you have had to make sacrifices in the  
7 areas of longer-term work and research; isn't that  
8 correct?

9 MR. WILSON: A. That's correct.

10 Q. In addition to the advancement of  
11 these dates, Mr. Wilson, you have also, of course, as  
12 we have heard had the reallocation of the \$240 million  
13 to your branch?

14 A. Yes.

15 Q. And I know this has been the subject  
16 of some testimony and I have tried to read most of it,  
17 but is it a fair conclusion that the decision to  
18 reallocate the \$240 million was not a decision that was  
19 made in consultation with your branch certainly?

20 A. Not to my knowledge.

21 Q. Mr. Wilson, dealing still with the  
22 \$240 million, am I correct that what you get from that  
23 money is also still an acceleration of some savings  
24 that you might have gotten otherwise beyond the year  
25 2000? You have now moved those up to before the year

1 2000?

2 A. I think that is an element of that,  
3 too, yes.

4 Q. Does that account for most of the  
5 benefit that you can see getting for the \$240 million?

6 A. No, it does not. Most of the benefit  
7 of the \$240 million on a rough cut is accelerating  
8 results from the late 90s into the early and mid-90s.

9 Q. All right. But we are talking  
10 essentially about acceleration?

11 A. It is getting more results sooner,  
12 yes.

13 Q. All right. Staying for a moment with  
14 decisions made by others and particularly by the  
15 government, and let's be clear, Mr. Wilson, the  
16 decision for the \$240 million, that was a government  
17 decision clearly, was it not?

18 A. I think I would characterize it more  
19 accurately as the government asking that Ontario Hydro  
20 cease its work on nuclear pre-engineering and  
21 environmental assessments and asking Ontario Hydro to  
22 reallocate. I believe the decision was Ontario  
23 Hydro's.

24 Q. All right. Certainly after the  
25 government request came and before the decision was



1 made to put those funds on your table, no further  
2 analysis was undertaken with your department as to  
3 whether and how those monies could be used.

4 A. There was consultation on what the  
5 opportunities might be for an increase of funds in the  
6 short term.

7 And the feedback that we provided to the  
8 senior management in Ontario Hydro was that there were  
9 a number of opportunities that could be considered and  
10 fast-tracked.

11 Q. Mr. Burke, we have had some  
12 discussion already on and off about the issue of  
13 standards which is another area where the government  
14 has a lot of say.

15 Would you agree with me that in the long  
16 run, standards are going to be much larger contributors  
17 to demand and capacity reductions than utility DSM  
18 programs?

19 MR. BURKE: A. Just a minute. Well, to  
20 the extent that I can answer that for Ontario, our  
21 scenarios in Exhibit 258 indicate possible  
22 contributions of standards.

23 And certainly for case C, the one that  
24 yields the 3500 case, we are not counting on standards  
25 to contribute more than demand management programs.

1 I am looking through here to see at what  
2 point. I think by case D when we move from the 50 per  
3 cent of the maximum economic to the 100 per cent of the  
4 maximum economic, it is at that stage that standards  
5 could have that effect and I really could not prejudge  
6 the role of standards in this province.

7 Q. I perhaps put the question poorly.  
8 Let me try again: The farther you move into the  
9 future - and I am not necessarily restricting it to  
10 between now and 2,000 but even beyond - the farther out  
11 you move, as a rule, standards have the potential to be  
12 much larger contributors to reducing your capacity  
13 requirements?

14 A. Not relative to anything else, just  
15 relative to where they are today.

16 Q. Relative to the potential that  
17 utility-sponsored programs hold?

18 A. Well, certainly the potential can  
19 only go up from here and I don't know whether it will  
20 ever cross over in Ontario.

21 Q. Don't we have a situation, Mr. Burke,  
22 where as you go out in time, we can reasonably expect  
23 standards are going to cover more areas, more and more  
24 areas progressively, and as your building and your  
25 equipment stock turns over and becomes subject to

1 standards rather than having to be retrofit under  
2 utility programs, you tend to get a growing and  
3 significant influence of standards relative to DSM  
4 programs?

5 A. If we were to have standards on new  
6 housing that were more stringent than today, standards  
7 on retrofitting of housing in other commercial  
8 buildings in the same way, I would agree.

9 But where we are seeing most of our  
10 EEI -- sorry. Where standards are currently being  
11 applied - that is to appliances - the EEI potential in  
12 the appliances area is not going to dominate the EEI  
13 potential in Ontario. It really will only start to be  
14 the case that standards will have the effect that you  
15 are talking about when they start to apply to the  
16 building stock or commercial and residential.

17 And really, right now we have an Ontario  
18 building code for new housing which it is nice, but it  
19 is certainly not anywhere close to what the amount we  
20 have included as for the R2000 house would generate by  
21 way of savings, another 35 per cent increment.

22 [4:35 p.m.]

23 So that, as I say, until standards get  
24 more broadly applied to building stocks, I do not think  
25 we will be in the situation you are describing.

1 Q. But if one assumes that there is a  
2 commitment by the legislatures to move forward and  
3 become somewhat more aggressive with standards  
4 overtime, and looking at the longer time frame, 15, 20  
5 years, would you agree with me that as general rule you  
6 would tend to see much more of your capacity savings  
7 coming from standards and progressively less from DSM  
8 programs as more and more of your building stock and  
9 your appliances comes under standards and no longer  
10 needs utility programs?

11 A. To the extent that government  
12 actually implements the kinds of standards you are  
13 talking about, certainly the preponderance of the EEI  
14 affects are in savings to do with space heating and  
15 cooling, and so on, in residential and commercial  
16 buildings and the lighting and so on in those  
17 buildings.

18 So, that yes, that's true. A lot of the  
19 reason that we have presented Exhibit 258 and the way  
20 we have presented it is to get a sense of the extent to  
21 which the government is prepared to move in that  
22 direction, and we do not have a good sense of that  
23 right now.

24 Q. Would it be fair to describe  
25 California as one of those jurisdictions where you have

1 got, shall we say, more aggressive appliance and  
2 building code standards?

3 A. Yes.

4 Q. If you turn up, please, Mr. Burke,  
5 page 82 of Exhibit 314, you will see this is an excerpt  
6 from a 1990 report, October 1990 report of the  
7 California Energy Commission, and if you look at page  
8 82, this is a table, "Statewide Committed Peak Demand  
9 Savings." Are you with me, Mr. Burke?

10 A. Yes.

11 Q. Have you a chance to look at this at  
12 all?

13 A. I have had a chance to look at this a  
14 little bit and I have had a chance to look at the  
15 report it comes from a little bit. The California  
16 energy planning process is not a trivial one, so you  
17 may range into areas I am not comfortable with.

18 Q. Let me try it. If you are not  
19 comfortable, tell me.

20 Does this progression here we see over  
21 time as we move from 1987 to 2009, you see significant  
22 increases in the contribution to peak demand savings  
23 from appliance and building standards and less and less  
24 from utility programs?

25 A. Well, let me give you how I



1 understand these results.

2 Certainly the building standards and  
3 appliance standards are in place and in many cases have  
4 been in place for some years, and so through time the  
5 cumulative impact of these increases. And it is  
6 presumed in the plan that these standards are  
7 maintained through time.

8 The difference is that the public agency  
9 programs and the utility programs are committed  
10 programs, and like our programs for utilities, they may  
11 have a two to five year life, or they may last longer  
12 but are in a small niche of the market.

13 There isn't a sense that the utility  
14 programs are designed in such a way that they utilize  
15 the full potential, shall we say, in the marketplace.

16 So, that my sense is that there is  
17 another category that the California Energy Commission  
18 reports on when it renders its decision, which is the  
19 uncommitted programs, and those may, in fact, grow  
20 considerably in order to balance demand and supply in  
21 California.

22 That is my understanding. That may be  
23 incorrect, but that is my understanding of how they do  
24 their planning. They look at committed programs; that  
25 is, essentially programs that are already operational

1 in California today, and then they may report back and  
2 say, you need to commit more programs in order to  
3 balance demand and supply, or they may say, NUGs are  
4 doing so well in California we do not need any more  
5 programs, so don't commit any more programs.

6 I do not think you can infer from this  
7 anything other than that.

8 The standards themselves are surely going  
9 to accumulate significant savings over time. But where  
10 the role of programs is, I think, is found later on in  
11 this report that you are drawing from and the extent to  
12 which the State of California believes it is necessary  
13 to use uncommitted programs.

14 You notice the heading is "Statewide  
15 Committed Peak Demand Savings". So, there is a whole  
16 category of uncommitted programs.

17 Q. That is fair enough, Mr. Burke.

18 DR. CONNELL: Let me just understand what  
19 I am looking at here.

20 I presume the data here are cumulative  
21 totals over the span shown as against some perhaps  
22 basic load forecast. They wouldn't have been corrected  
23 for what might have been a natural evolution in the  
24 absence of standards?

25 MR. BURKE: Well, I think that California

1 has a trend forecast which takes into account natural  
2 conservation and price effects before the application  
3 of standards and programs.

4 So, if you thought this process was  
5 complicated with the basic and a primary, effectively  
6 in California, as I understand it, they have about five  
7 layers of this where they start with a trend before  
8 price changes and then they incorporate price changes  
9 and then they look at the effects of currently approved  
10 standards and they look at committed programs, and I  
11 believe what we are looking at here is the bottom line  
12 at that stage. And there is yet another layer of  
13 uncommitted programs yet to come, uncommitted  
14 standards, and so on. It's not on this page.

15 DR. CONNELL: I think I will take these  
16 as just directional then and not start to do complex  
17 deductions on this basis.

18 MR. MARK: Q. The part, Mr. Burke, and  
19 tell me if you agree, is that if your primary concern  
20 is with a capacity savings in the longer term,  
21 standards are going to generally be, as time goes on, a  
22 larger contributor to those savings than utility  
23 programs?

24 MR. BURKE: A. Well, I have got to  
25 admit, I am not quite sure why you are trying to make

1 that point and I can't give you any assurance of that  
2 in Ontario until we have a better sense of what the  
3 government is prepared to do.

4 From the perspective of for the long-term  
5 do you have greater confidence or certainty in the  
6 results? Standards certainly give you greater  
7 certainty in the results. They give you higher  
8 penetration rates, but whether or not we will the  
9 breadth of standards in Ontario to make a significant  
10 contribution and exceed the contribution of programs,  
11 that I really can't say.

12 Q. You have talked about one of the  
13 benefits of standards which is the certainty and the  
14 higher penetration rates.

15 Let me deal with another aspect of  
16 standards. It places the cost of achieving the  
17 efficiencies in a different place than you have the  
18 cost if you have a utility program; is that fair?

19 A. Well, a typical standard does put the  
20 cost of achievement on the customer and effectively the  
21 standards are designed to be economic, so the customer  
22 in the long run is certainly better off. But there are  
23 the issues that present barriers to uptake now that are  
24 effectively the standard overrides.

25 Q. What a standard does, as you said, it

1 - applies to an economic program, but it mandates the  
2 adoption of the economic program, whereas a utility  
3 program tends to use an incentive to overcome whatever  
4 the resistance is to the adoption of the economic  
5 program; is that fair?

6 A. Yes. I think, though, that standards  
7 can be written in such a way that it still leaves a  
8 range of choice to the customer.

9 Q. I am not suggesting that it doesn't.  
10 You get the users of the equipment and the technologies  
11 then under standards are the ones who pay for them;  
12 correct?

13 A. Yes.

14 Q. Whereas what happens with a utility  
15 program involving incentives is you tend to get the  
16 ratepayers who are not the ones who are the users of  
17 the equipment financing the incentive cost at least?

18 A. There is a risk of income transfers,  
19 yes.

20 Q. As you might have to get more  
21 aggressive with your incentive payments to achieve the  
22 results, you run the risk of even greater income  
23 transfers?

24 A. Yes. Well, it is hard to say  
25 actually. The more you are paying out, it could be



1 that in fact the higher proportion are participants in  
2 one program or the other. The net transfer from any  
3 individual's perspective may diminish as the amount of  
4 incentive payments go out.

5 Q. Generally, you would have those with  
6 inelastic demands, would be bearing most of the cost or  
7 proportionately more of the cost?

8 A. Yes, I guess that is fine.

9 Q. Would you agree with me, Mr. Burke,  
10 that it is the residential consumer that has the most  
11 inelastic demand?

12 A. I think that we really have to talk  
13 within a customer class here because the program design  
14 certainly takes into account the different  
15 characteristics as far as -- I think inelastic demand  
16 really is -- perhaps I agreed to that characterization  
17 too quickly because we are trying to maintain the  
18 quality of demand.

19 [4:45 p.m.].

20 What we are talking about is the extent  
21 to which perhaps different customer classes have  
22 different -- find themselves more or less impeded by  
23 first cost barriers perhaps, so that some segments  
24 require faster paybacks and some slower paybacks for  
25 the adoption of measures, and certainly the program

1 design addresses that issue.

2 It's not clear to me that one can make a  
3 characterization that participants will be inelastic  
4 consumers. It could be that they are inelastic in the  
5 sense that they face some barrier which can be readily  
6 overcome through programs.

7 Q. Would you agree with me this far, Mr.  
8 Burke, that to the extent you move to standards and  
9 away from incentive programs, you reduce the risk of  
10 inequitable income transfers?

11 A. Yes, I think I would have to agree  
12 that that is one benefit of standards.

13 Q. Just lastly on this issue of  
14 standards, Mr. Burke, am I correct that in Case C you  
15 are assuming standards will be set at levels which  
16 achieve 50 per cent of what you have identified as the  
17 economic potential?

18 A. Yes. In the end-uses for which we  
19 have said are eligible for standards and those are  
20 listed in the appendix.

21 Q. Obviously talking about ones to which  
22 standards could apply.

23 A. Yes.

24 Q. How did you adopt or arrive at the 50  
25 per cent figure? What was the genesis of that

1 assumption?

2 A. Simply the scenario. We have very  
3 little basis upon which to assess how aggressive the  
4 government is prepared to be as far as standard  
5 setting is concerned. And also, we have taken into  
6 account already by inclusion of the 1994, the  
7 application of the 1993 U.S. refrigerator standard and  
8 the other standards that are coming in in the U.S. in  
9 '93, all of the currently known U.S. standards. So  
10 that if it were to be Ontario's policy simply to  
11 harmonize with U.S. standards, we don't have -- I think  
12 it would be a guessing game to predict where exactly  
13 they would be in the future, so we have simply  
14 postulated to standards of -- to degrees of  
15 aggressiveness, you might say.

16 Q. Let me ask you it this way: Have you  
17 applied some judgement, at least, to determine whether  
18 your 50 per cent figure corresponds with what you see  
19 as a reasonable or likely standards case, considering  
20 the standards which exist in the U.S. and the ones  
21 which may seriously be under discussion here?

22 A. Well, let's take the case of  
23 refrigerators. I believe the 1993 U.S. standard will  
24 bring average annual consumption down to about 700  
25 kilowatthours a year and our estimate of EEI potential

1 in the year 2000 is 500 kilowatthours a year. And the  
2 base case that we were starting with was about 1100  
3 kilowatthours a year consumption for new refrigerator  
4 in 1990.

5 So, in the refrigerator case, which is an  
6 area where pretty aggressive standards are being set,  
7 and certainly is at the forefront of where standard  
8 setting goes, we have a standard that is more than  
9 halfway between the base year and the EEI value for  
10 economic potential.

11 When it comes to things like building  
12 codes, almost any increment is conceivable. We went  
13 from a 1986 building code which allowed for -- we said  
14 R2000 was a 50 per cent saving over that, and the 1991  
15 building code has increased the condition such that a  
16 15 per cent increase in efficiency is built into that  
17 standard; there is only 35 per cent left. You could  
18 make the next leap in that standard almost anywhere.

19 Q. But my question is really aimed at  
20 this, Mr. Burke. When you have the 50 per cent figure  
21 in there, do you have any sense of whether that is a  
22 number which corresponds across the board, because  
23 that's the way you have applied it in aggregate, with a  
24 set of standards which is significantly more aggressive  
25 than what we have here and what is in the U.S. already

1 or comparable or what?

2 A. We already have the U.S. standards  
3 built into the 1990 load forecast, to the extent that  
4 they exist and are transferable to Ontario, and several  
5 standards that are coming down the pipe through the  
6 Energy Efficiency Act in Ontario which are probably not  
7 part of the U.S. package. But we haven't gone end-use  
8 by end-use and said, this is a standard that we could  
9 apply here, that is a standard that we could apply  
10 there, and when we add it all up we get 50 per cent,  
11 and an alternative is, what, about standards at 100 per  
12 cent.

13 Q. But to be clear, you have assumed in  
14 your basic load forecast the efficiencies which result  
15 from adoption here of the generally prevailing U.S.  
16 standards?

17 A. And to come, yes.

18 Q. And so when you have in your Case C  
19 scenario the assumption that there are additional  
20 savings to be achieved by standards, we are talking  
21 about the imposition of standards in Ontario at a level  
22 which must be, to some degree of significance, above  
23 what you see as will be the prevailing U.S. standards  
24 at the same point in time?

25 A. I didn't quite follow. At what point



1 in time?

2 Q. The year 2000.

3 A. You are asking whether the 50 per  
4 cent case corresponds to what we expect U.S. standards  
5 to be --

6 Q. No, I am suggesting it's the  
7 opposite.

8 Your basic load forecast already assumes  
9 in it harmony between Ontario standards--

10 A. No, it doesn't.

11 Q. Just let me finish the question.

12 --between Ontario standards and what you  
13 see the U.S. standards being in that year?

14 A. No. I think all we have said is that  
15 we have included in the basic load forecast all of the  
16 known standards and that takes up to 1994. And we have  
17 not built into the basic load forecast any further  
18 increment in standards. It's widely expected that  
19 there will be a 1998 revision to the U.S. refrigerator  
20 standard. That is not in the basic load forecast at  
21 this point because we don't know what that revision  
22 will be, but to a certain extent it's captured in our  
23 primary load forecast to the extent that we have takeup  
24 of our program for refrigerators.

25 Were we to have a standard that went to

1 100 per cent of our maximum efficiency for  
2 refrigerators, 500 kilowatthours a year, that would  
3 probably correspond, as I have said, to what the U.S.  
4 may very well adopt as a standard in 1998, but I can't  
5 promise that.

6 MR. MARK: All right. I think we have  
7 taken that about as far as we can, Mr. Chairman. That  
8 brings me to the end of this area. Perhaps it would be  
9 a convenient time to break for the day.

10 THE CHAIRMAN: How much longer do you  
11 think you will be?

12 MR. MARK: We have spent a fair bit of  
13 time unexpectedly today. I think I will be at least to  
14 mid-day and perhaps a bit longer; that's about as best  
15 as I can put it.

16 THE CHAIRMAN: How does that fit in with  
17 your scheduling?

18 MS. MORRISON: Well, Mr. Grenville-Wood  
19 will be here tomorrow expecting to go on sometime  
20 tomorrow. He has a few hours, as I understand it.

21 THE CHAIRMAN: He will be coming from  
22 Ottawa?

23 MS. MORRISON: Yes. But he understands  
24 the situation as of now.

25 Mrs. Mackesy has a short number of

1 questions, and the CAC expects to use all of Thursday.

2 THE CHAIRMAN: All right. We will

3 adjourn then until tomorrow morning at ten o'clock.

4 THE REGISTRAR: This hearing will adjourn

5 until ten o'clock tomorrow morning.

6 ---Whereupon the hearing was adjourned at 4:55 p.m.  
7 to be resumed on Wednesday, September 25, 1991, at  
8 10:00 a.m.

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E R R A T A  
and  
C H A N G E S

To transcript for Monday, the 24th day of September,  
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(submitted by D. Peckham, EAB)







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